BLS

Basic Life Support Patient Care Standards

January 2007

Version 2.0

Emergency Health Services Branch
Ministry of Health and Long-Term Care

Ontario

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To all users of this publication:

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Ontario

MEMORANDUM TO: All Recipients of the BLS Standards

FROM: **Malcolm Bates**
Director
Emergency Health Services Branch

RE: **Basic Life Support (BLS) Patient Care Standards, version 2.0**

Further to my memo dated October 20, 2006, I am pleased to provide you with a copy of the BLS Patient Care Standards (version 2.0).

The package that you have received consists of a printed copy, an electronic copy of the standards in PDF format on CD-ROM and a Training Bulletin that summarizes the major revisions of the BLS Patient Care Standards (version 2.0). The updated BLS Patient Care Standards have also been posted on the ambulance transition website at www.ambulance-transition.com.

The new standards will be implemented on January 1, 2007.

If you have any questions regarding the BLS Patient Care Standards (version 2.0), please contact Ms. Cathy Francis, Manager of Education and Patient Care Standards at (416) 327-7843.

M. Bates

Malcolm Bates

Training Bulletin

Summary of Major Revisions
BLS Patient Care Standards
version 2.0

Fall 2006

Issue Number 106 – version 1.0

Emergency Health Services Branch
Ministry of Health and Long-Term Care

Ontario

Summary of Major Revisions
Basic Life Support Patient Care Standards-version 2.0

Introduction

The Ministry of Health and Long-Term Care, Emergency Health Services Branch has completed a review and revision of the *Basic Life Support Patient Care Standards*. These revised standards will come into effect on January 1, 2007.

The review and development of this updated version of the *Basic Life Support Patient Care Standards* is the result of the assistance of groups and individuals, such as Paramedics, EMS Directors, Base Hospital staff, Base Hospital Medical Directors, College Coordinators, Field Offices, Ornge, Legal Services Branch and Regional Training Coordinators.

This summary of the major revisions to this version of the *Basic Life Support Patient Care Standards* has been developed to assist in quickly identifying areas where significant changes have been made to content, and to provide rationale for the changes, where applicable.

General Changes Applied Throughout the Document

Independent, Colour-coded Sections

The *Basic Life Support Patient Care Standards version 2.0* has been divided into distinct sections based on the content of each section. Colour-coded tabs and cover pages separate each section and correspond to colour-coding within the Table of Contents. This will make it easier for users of the document to locate specific sections in the document.

In addition to the colour-coded tabs and cover pages, each section has a unique page numbering system independent of other sections. This will allow for timely revisions to the content of a specific section of the standards. When the need for change is identified, only the section(s) where changes are made will need to be reprinted allowing for an easier substitution of the section(s) rather than requiring a complete reprinting of the entire standards document.

Removal of the Appendices Section

Previous versions of the *Basic Life Support Patient Care Standards* had a separate section for appendices which contained various policies, patient care guidelines, general information and teaching points in support of the actual standards. Version 2.0 no longer has a separate section of appendices. Policies that were contained in the appendices of the previous versions of the standards have been updated and made into specific standards contained within *Section 1 – General Standard of Care*. Other content, such as patient care guidelines, have been reviewed and incorporated, where applicable, into specific standards.

This change to the standards will make it easier for all users to access relevant information and reduce the need to reference information in numerous locations.

Consolidation of Some Standards

Some standards that were part of previous versions of the *Basic Life Support Patient Care Standards* have been deleted from this version. Pertinent information that was contained in these standards has been incorporated into other standards within the new version.

This change to the standards will ensure that all related information is contained within standards relating to specific chief complaints/presenting problems. This enhances the document by making it easier for users to access all relevant information in one location and reduces the need to reference information relating to specific topics in numerous locations. Specific details regarding which standards have been deleted and incorporated elsewhere are listed later in this bulletin.

Hyperventilation in the Management of Patients

Recent research has demonstrated that prophylactic hyperventilation of patients, particularly those suffering from acute Traumatic Brain Injury (TBI), may have a negative impact on patient outcomes. As such, the medical community has adopted an approach whereby hyperventilation is only provided in the management of patients in very specific circumstances. Changes have been made to a number of areas within the *Basic Life Support Patient Care Standards* regarding the provision of hyperventilation to patients in the prehospital environment that is in keeping with this approach. Hyperventilation will now only be provided on a limited basis to patients suffering from TBI who are exhibiting signs and symptoms of herniation syndrome (rapidly deteriorating Glasgow Coma Score (GCS) or GCS <9 with asymmetric pupillary reaction/asymmetric motor response) *after* measures have been taken to mitigate hypoxemia and hypotension.

Management of Shock

Previous versions of the *Basic Life Support Patient Care Standards* directed paramedics to position patients with suspected hypovolemic shock in the Trendelenberg position or to elevate the legs as part of their management unless this positioning compromised breathing efficiency. Current expert medical opinion is that this position has no effect in improving a patient's condition and eventual outcome, and may in fact contribute to a worsening of their condition in some situations.

References directing paramedics to place a patient in Trendelenberg position or elevating their legs in cases of suspected hypovolemic shock have been removed from a number of specific areas and standards within the *Basic Life Support Patient Care Standards version 2.0*.

CPR/Resuscitation of Patients

Previous versions of the *Basic Life Support Patient Care Standards* provided specific direction to paramedics in terms of parameters for the resuscitation of patients suffering cardiac arrest, respiratory arrest, etc. The language within version 2.0 of the standards has been changed in all applicable areas such that paramedics are now directed to follow the **current** published *Heart and Stroke Foundation of Ontario (HSFO) Guidelines* with respect to the resuscitation of patients.

This change has been made to allow the standards to be more responsive to changes in resuscitation guidelines made by the HSFO and reduce the need to update the document whenever CPR/resuscitation guidelines are changed. The change will also ensure consistency with the applicable medical directives contained within the *ALS Patient Care Standards*.

Section 1
General Standard of Care

Section 1, General Standard of Care, provides paramedics with direction on all aspects of an ambulance call which is general in nature and not specific to any one condition.

The *General Standard of Care* will now include a number of "new" standards which had been included in the Appendices Section of previous versions of the *Basic Life Support Patient Care Standards* as guidelines and/or policies. This change has been made in keeping with the overall objective of transferring items that were previously deemed policies or guidelines into the main body of the standards.

The following is a list of new standards included in *Section 1*:

- Air Ambulance Utilization Standard
- DNR Standard
- Intravenous Line Maintenance Standard
- Load and Go Patients Standard
- Oxygen Therapy Standard
- Patients with Vital Signs Absent (Transportation) Standard
- Physician's Orders Standard
- Police Notification Standard
- Self-Administered Medications Standard for EMAs/Paramedics

Another new standard titled the *Paramedic Conduct Standard* has been also been added into the *General Standard of Care Section*. This standard had previously been included in the *Advanced Life Support Patient Care Standards* however, as this standard applies to paramedics at all levels, it was incorporated into the *Basic Life Support Patient Care Standards*.

Section 2
Medical Patient Categories

Specific standards of care for patients suffering from illness of a medical nature have been developed not on the basis of diagnosis, but on the basis of:

- chief complaint as stated by the patient/bystanders;
- presenting problem as indicated by the patient/bystander;
- immediately obvious primary survey critical findings, e.g. respiratory arrest.

Each patient category in this section includes:

- key standard statements in short form, drawn from the *General Standards of Care*;
- standards which are specific to the condition under discussion;
- guidelines where considered appropriate.

The *Basic Life Support Patient Care Standards version 2.0* include a *Medical Patient Assessment Overview* (page 2-4) designed to provide paramedics with an easy to follow synopsis of the minimum assessment elements included in the *Medical Format, Short Form of General Standard of Care*.

Section 3
Trauma Patient Categories

Specific standards of care for patients suffering from injuries as a result of trauma have been developed not on the basis of diagnosis, but on the basis of:

- chief complaint as stated by the patient/bystanders;
- presenting problem as indicated by the patient/bystander;
- immediately obvious primary survey critical findings, e.g. chest injury.

Each patient category in this section includes:

- key standard statements in short form, drawn from the *General Standards of Care*;
- standards which are specific to the condition under discussion;
- guidelines where considered appropriate.

The *Basic Life Support Patient Care Standards version 2.0* include a *Trauma Patient Assessment Overview* (page 3-3) designed to provide paramedics with an easy to follow synopsis of the minimum assessment elements included in the *Trauma Format, Short Form of General Standard of Care*.

Significant changes have been made to the *Trauma Format-Short Form of the General Standard of Care* as well as the *Head Injury-Blunt, Penetrating Standard* with regard to the management of traumatic brain injury (head injury). The changes to these management standards were made to reflect current medical expert opinion on the use of hyperventilation in these cases. Hyperventilation as a course of management for "head injured" patients will be reserved for those patients exhibiting the signs and symptoms of herniation syndrome.

Changes have been made with regard to the management of patients suffering from hypovolemic shock, specifically, the positioning of these patients. Current medical opinion is that positioning a patient suffering from shock in the Trendelenburg position or with legs/feet elevated has no positive impact on outcome and may cause respiratory complications in some patients. Changes have been made within the *Trauma Format-Short Form of the General Standard of Care* and specific standards in *Section 3* to reflect this new standard of care.

The *Sexual Assault (Alleged) Standard* has been moved to this section from the *Obstetrical Section* in previous versions. This was done as this type of situation was more likely to result in traumatic injuries and that it often has no relationship to an obstetrical condition.

The *Eye Burns-Thermal, Radiation (Arc Welder's Flash, Snow Blindness) Standard* found in previous versions of the standards under Trauma Patient Categories has been removed from version 2.0. Pertinent information previously contained within this standard has been incorporated in the *Burns-Thermal Standard* located in *Section 4 (Environmental-Related Emergencies)*. This change was made as part of the overall objective of consolidating related information into more appropriate standards.

Section 4
Environmental-Related Disorders

The *Lightning Injuries Standard* found in previous versions of the standards has been removed from version 2.0. Pertinent information previously contained within this standard has been incorporated in the *Electrocution/Electrical Injury Standard.* This change was made as part of the overall objective of consolidating related information into more appropriate standards.

Changes relating to the management of pit viper bites has been made to the *Snake Bites Standard* including the removal of references the application of cold packs on the wound. These changes were made to make the standard consistent with current expert opinion with respect to the management of this condition.

The *Stings/Bites-Insect Standard* has been removed from the *Basic Life Support Patient Care Standards-version 2.0.* The relevant information previously contained within this standard has been incorporated within the *Allergic Reaction-Known or Suspect Standard* found in *Section 2-Medical Patient Categories.* This change consolidates all pertinent and relevant information into one standard.

Section 5
Obstetrical Conditions

The following new standards have been included this section:

- Trauma in the Pregnant Patient
- Traumatic Maternal Cardiac Arrest

This information was previously contained within the Appendices Section of previous versions of the standards. While both of these conditions are trauma related, incorporating them into this section will make it easier for paramedics to quickly reference the information.

Midwives on the Scene Standard has been changed from a policy to a standard and moved from the Appendices Section in previous versions of the standards to *Section 5-Obstetrical Conditions* in version 2.0. As well, a clearer definition of a midwife has been included in this version of the standards to assist paramedics in determining who is authorized to assist a woman with an out of hospital birth.

Changes to CPR modalities have been made within the *Neonatal Assessment and Management Standard.* These changes will make this standard consistent with current expert medical opinion regarding neonatal resuscitation.

Section 6
Pediatrics

Additional information regarding observations and assessment has been added to *the Child Abuse (Suspect) Standard.* This information was previously contained in the *Appendices Section* of previous versions of the standards but was moved to enhance the ability of paramedics to source specific information on related subjects in one location.

Section 7
Geriatrics

A new standard, the *Elder Abuse (Suspect) Standard,* has been added to the *Basic Life Support Patient Care Standards version 2.*0. This standard will provide paramedics with valuable information on the assessment and recognition of suspected elder abuse. The standard also provides specific direction to paramedics on what to do in the event of a suspected elder abuse case.

Section 8
Psychiatric Disorders

The following new standards have been added to this section of the *Basic Life Support Patient Care Standards version 2.0*:

- Emotionally Disturbed Patients – Care and Transportation Standard
- Restraint of Patients Standard

The addition of these standards was part of the overall objective of moving current policies and other relevant information from the *Appendices Section* of previous versions and into the main body of the standards in version 2.0.

Paramedics have been provided with additional information and steps necessary when transporting a patient who has been restrained in order to ensure the safety of the patient.

Section 9
Bibliography

Many of the references included in the *Bibliography Section* of previous versions of the *Basic Life Support Patient Care Standards* were used in the development of the original document in 1995. As a number of these references have become dated and the currency of the standards' content is now based on expert medical opinion, this section was removed from the *Basic Life Support Patient Care Standards, version 2.0.*

Acknowledgements

This revision of the *Basic Life Support Patient Care Standards* is the result of the assistance of a number of groups and individuals, such as Paramedics, EMS Directors, Base Hospital staff, Base Hospital Medical Directors, College Coordinators, Field Offices, Ornge (formerly Ontario Air Ambulance Services Co.), Legal Services Branch and Regional Training Coordinators.

In particular, the Ministry would like to gratefully acknowledge the following individuals for their significant contributions:

Dr. Rick Verbeek

on behalf the Ontario Base Hospital Group Medical Advisory Committee

Ms. Lynne Urszenyi

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Preface

The BLS Patient Care Standards state the Ministry of Health and Long-Term Care expectations with respect to how paramedics will interact with their patients. The standards set out a logical ordering of the inter-related activities and practices of paramedics, activities which start with the patient's entry point to, and end with, their exit point from the ambulance system. Process standards are intended to be instructive and educative, and should facilitate service delivery. They are intended to maximally protect patients from receiving inappropriate care, and service providers from being subjected to inappropriate legal suits, disciplinary actions, etc.

In creating the standards, an assessment-based approach was utilized e.g. a standard was developed for assessment and management of shortness of breath, rather than for asthma. In the field setting, providers MUST focus on the following three aspects of patient care:

a) identifying serious disruptions to critical functions - airway, breathing, circulation and level of consciousness;

b) applying measures to correct these disruptions as soon as feasible, and,

c) determining the need for, and where required, initiating rapid transport. Attempting to make a definitive diagnosis in the field may lead to unnecessary delays in treatment and transport. Diagnosis is of secondary importance in field practice.

Each standard has been designed:

a) to ensure that patient care is appropriate, safe, timely and efficient;

b) to allow paramedics to exercise judgement as required by the situation;

c) to account for the many diverse and adverse scene conditions which may, in some instances, alter the care provided to patients suffering from the same or similar illnesses or injuries.

Where a standard was not deemed feasible or practical, guidelines have been incorporated with certain standards. The guidelines are intended to direct paramedics towards desired practices for unusual and/or less commonly encountered field situations.

The benefits of having standards are obvious. All paramedics can now be assessed using the same objective criteria.

Definitions

For purposes of this manual the following definitions apply:

Paramedic	Paramedic is the same as defined under the *Ambulance Act* and for the purposes of this standard includes Emergency Medical Attendant as defined under the *Ambulance Act* and Regulation 257/00 or as may be amended from time to time, unless otherwise indicated.
Standards	Criteria which will define the minimum acceptable levels or range of Basic Life Support patient care performance for **ALL** paramedics in Ontario.
Guidelines	General statements intended to provide information and guidance with respect to formulation of working assessments, or, directing principles of preferred practice applicable to specific clinical circumstances where a standard is not reasonable or appropriate.

Purpose of Basic Life Support Patient Care Standards

To state the **minimum** acceptable level or range of Basic Life Support patient care performance expected of paramedics in all Ontario ambulance services, while recognizing circumstances in the field which may result in or require deviation from the minimum standards.

Purpose of Basic Life Support Patient Care Guidelines

To direct, guide and assist paramedics' performance of Basic Life Support level patient care.

Objectives of Implementation of the Standards

1. To ensure that Basic Life Support level patient care is performed in a safe, efficient, appropriate and timely manner.
2. To provide a measure of protection for patients receiving service and individuals providing service.
3. To provide a rational basis for paramedics' decision-making and judgements.
4. To assist less experienced paramedics or recent graduates in developing and focusing decision-making skills, and to assist more experienced paramedics in refining and perfecting these skills.
5. To provide a fair and objective basis for assessment of paramedics' performance.

6. To identify training and continuing education needs of paramedics.
7. To provide direction in the development of assessment and testing programs for paramedics.
8. To provide direction in the development of audit and other quality assurance objectives for ambulance service operators, medical control authorities and others involved in quality assurance activities for ambulance services.
9. To provide assistance and direction in decision-making for Emergency Health Services Branch staff, ambulance service operators, and others involved with resource allocation.

Practice and the Basic Life Support Patient Care Standards

1. A paramedic may practice at a level or levels above the standards specified in this manual if:
    a) They are qualified to do so, and,
    b) Such practice is in accordance with their ambulance service policies.
2. When issuing directives to paramedics on patient care related topics, ambulance service operators must ensure that such directives are compatible with the standards.
3. If a paramedic performs patient care activities which they have not been trained or approved to perform, or the standard of care is not met, they may be subject to investigation and/or other actions as dictated by Ministry standards, policy, legislation and the circumstances and events surrounding the incident.

Review and Revision of the Basic Life Support Patient Care Standards

The standards will be reviewed at regular intervals to be determined by the Ministry of Health and Long-Term Care (MOHLTC) and by means of a Ministry approved process. Revisions will be made as necessary to ensure that the standards remain current.

Abbreviations Standard

A

abdomen	ABD/ABDO
acute myocardial infarction	AMI
administer/administration	admin.
Advanced Emergency Medical Care Assistant	AEMCA
Advanced Life Support	ALS
after meals	PC
air entry	a/e, A/E
airway, breathing, circulation	ABCs
airway, breathing, circulation, deficits (neurologic)	ABCDs
alpha	α
ambulance call report	ACR
ambulance communications service	ACS
ambulatory	amb.
American Pediatric Gross Assessment Record	APGAR
amount	amt.
ante-partum hemorrhage	APH
anterior	ant.
approximately	approx. or ≈
as required, as necessary	PRN
at	@
at bedtime	HS
automated external defibrillator	AED

B

bag valve mask	BVM
base hospital physician	BHP
basic life support	BLS
before meals	AC
beta	β
bilateral	bilat. /bil.
birth control pill	BCP
blood	bld.
blood pressure	BP
booked	bkd.
bowel movement	BM
bowel sounds	BS
by mouth	PO

C

caesarean section	C-section /C. sect.
cancer	Ca /CA
capsule(s)	caps

carbon dioxide	**CO_2**
carbon monoxide	**CO**
cardiopulmonary resuscitation	**CPR**
cardiovascular system	**CVS**
catheter, catheterization	**cath.**
celcius (degree)	**C°**
centimetre	**cm**
central ambulance communication centre	**CACC**
central nervous system	**CNS**
cerebrospinal fluid	**CSF**
cerebrovascular accident	**CVA**
cervical spine	**C-spine**
chief complaint	**CC**
chronic obstructive pulmonary disease	**COPD**
circulation	**$circ^n$**
complains of/complaining of	**C/O**
computerized axial tomography	**CAT**
computerized tomography	**CT**
congestive heart failure	**CHF**
coronary artery disease	**CAD**
coronary care unit	**CCU**
Canadian Triage and Acquity Scale	**CTAS**

D

daily	**od**
date of birth	**DOB**
dead on arrival	**DOA**
decompression sickness	**DCS**
decreased	**↓**
deep vein thrombosis	**DVT**
deep breathing and cough	**DB & C**
defibrillation	**defib.**
delirium tremens	**DTs**
dextrose 5% in water	**D_5W**
dextrose 50% in water	**$D_{50}W$**
dextrose 3.3% & 0.3% sodium chloride	**⅔, ⅓**
diagnosis	**Dx**
diarrhea & vomiting	**D&V**
digitalis, digoxin	**Dig.**
dilatation/dilation and curettage	**D&C**
discharged	**DC**
discontinue	**D/C**
do not resuscitate	**DNR**
dorsalis pedis (pulse)	**DP**
dressing	**drsg.**
drop(s)	**gtt(s)**

E	ears, nose and throat	**ENT**
	electrocardiogram	**ECG, EKG**
	emergency department, room, unit	**ED, ER, EU**
	emergency medical attendant	**EMA**
	emergency medical care assistant	**EMCA**
	emergency medical service	**EMS**
	endotracheal tube	**ETT**
	equal	=
	estimated time of arrival	**ETA**
	ethanol, ethyl alcohol	**ETOH**
	every	**q**
	expected date of confinement (due date)	**EDC**
	expiration	**exp.**
	eye(s), ear(s), nose, throat	**EENT**
F	family history	**FH**
	feet (measure)	**ft.** or ′
	female	♀
	first degree	1°
	foreign body	**FB**
	four times a day	**QID**
	fracture	**Fx. or #**
G	gastrointestinal (tract)	**GI** or **GIT**
	genitourinary (tract)	**GU** or **GUT**
	Glasgow Coma Score	**GCS**
	gram	**g**
	greater than	>
	greater than or equal to	≥
	gynecology	**GYN**
H	head and neck	**H & N**
	head injury	**HI**
	heart rate	**HR**
	Heart & Stroke Foundation of Ontario	**HSFO**
	height	**ht**
	hemoglobin	**Hgb /HB**
	highway	**hwy**
	history	**Hx**
	history of present illness	**HPI**
	hour	**hr**

I	immediately	**STAT**
	inches	**in / "**
	increased	↑
	inferior	**inf.**
	injury, injection	**inj.**
	inspiration	**insp.**
	intensive care unit	**ICU**
	intracranial pressure	**ICP**
	intramuscular	**IM**
	intravenous	**IV**
	intermittent positive pressure ventilation	**IPPV**
	irregular	**irreg.**
	ischemic heart disease	**IHD**
J	jugular venous distension	**JVD**
K	keep vein open	**KVO**
	kilogram	**kg**
	kilometres	**km**
L	laceration	**lac**
	large	**lg.**
	last/last normal menstrual period	**LMP/LNMP**
	leads to, implies	→
	left	**L or Lt.**
	left lower lobe (lung)	**LLL**
	left lower quadrant (abdomen)	**LLQ**
	left upper lobe (lung)	**LUL**
	left upper quadrant (abdomen)	**LUQ**
	less than	<
	less than or equal to	≤
	level of awareness	**LOA**
	litre	**L**
	loss of consciousness, level of consciousness	**LOC**
	lumbar spine	**L-spine**
M	male	♂
	markedly decreased	↓↓
	markedly increased	↑↑
	mechanism of injury	**M. of I.**
	medications	**med(s)**
	mercury	**Hg**
	middle	**mid**

milligram	**mg**
millilitre	**ml**
millimetre	**mm**
minute	**min.**
moderate	**mod.**
motor vehicle accident	**MVA**
motor vehicle collision	**MVC**
multiple casualty incident	**MCI**
myocardial infarction	**MI**

N

nasogastric (tube)	**NG /NGT**
nausea, vomiting	**N & V**
nausea, vomiting, diarrhea	**N, V, D**
negative	**- /neg. /-ive**
neurology/neurologic	**neuro**
nitroglycerin	**nitro**
no, none	**Ø**
no change	**N/C**
no known allergies	**NKA**
normal	**N**
normal saline	**NS** or **N/S**
not applicable, not asked, not assessed	**NA, NASK, NASS**
nothing by mouth	**NPO**
not yet diagnosed	**NYD**
number	**#**

O

obstetrics	**OBS**
on arrival	**O/A**
on examination	**O/E**
once a day	**od**
operating room	**OR**
oriented to person, place and time	**oriented x1: x2: x3**
orthopedics	**ortho**
out-patient, out-patient department	**OP, OPD**
overdose	**OD**
oxygen	O_2

P

palpation	**palp.**
paroxysmal atrial tachycardia	**PAT**
patient	**pt.**
pediatrics	**peds.**
per rectum	**PR**
personal protective equipment	**PPE**
per vagina	**PV**
pick up (location)	**P/U**

plus/minus	**+/-**
police constable number	**PC #**
positive	**+/pos./+ive**
possible	**poss.**
posterior	**post.**
post-operative	**post-op**
post partum hemorrhage	**PPH**
potassium	**K^+, K**
prior to arrival	**PTA**
problem	**prob.**
pupils equal and reactive to light	**PEARL, PERL**

R

range of motion	**ROM**
red blood cells	**RBCs**
regarding	**re**
regular	**reg.**
respirations	**resp.**
respiratory rate	**RR**
respiratory therapist	**RT**
return of spontaneous circulation	**ROSC**
right	**R, Rt.**
right lower lobe (lung)	**RLL**
right lower quadrant (abdomen)	**RLQ**
right middle lobe	**RML**
right upper quadrant (abdomen)	**RUQ**
Ringer's lactate	**RL**
rule out	**R/O**

S

sacral spine	**S-spine**
second	**sec**
second degree	**2°**
semi-automated external defibrillator	**SAED**
shortness of breath	**SOB**
shortness of breath on exertion	**SOBOE**
small	**sm, sml**
sodium chloride (salt)	**NaCl**
solution	**sol^n**
spontaneous abortion	**SA**
strong and irregular	**str/irreg** or **S/I**
strong and regular	**str/reg** or **S/R**
subcutaneous	**SC** or **SQ**
sublingual	**SL** or **S/L**
Sudden Infant Death Syndrome	**SIDS**
superior	**sup.**
supraventricular tachycardia	**SVT**

T

tablet(s)	**tab(s)**
temperature	**temp.**
temperature, pulse, respirations	**TPR**
therapeutic abortion, time of arrival	**TA**
therapy, prescription, treatment	**R_x**
third degree	**3°**
thoracic spine	**T-spine**
three times a day	**TID**
times	**X**
to keep open	**TKO**
to keep vein open	**TKVO**
transient ischemic attack	**TIA**
tuberculosis	**TB**
twice a day	**BID**

U

unequal	**≠**
unit	**u**
upper respiratory tract infection	**URI, URTI**
urinary tract infection	**UTI**

V

vaginal	**vag**
vital signs	**VS**
vital signs absent	**VSA**
volume	**vol.**

W

water	**H_2O**
weight	**Wt**
white blood cells	**WBCs**
with	**$\bar{c}$ / w**
within normal limits	**WNL**
without	**$\bar{s}$ / w/o**

Y

year	**yr**
years old	**Y/O, y/o**

Section 1

General Standard of Care

Conditions

The General Standard of Care is applicable:

1. At all times when a paramedic is providing patient care while on duty.
2. To patient care provided by a paramedic where care is general in nature (stated or implied).
3. To patient care pertaining to certain illness or injury categories/situations as specifically defined within the General Standard of Care.
4. Under all environmental conditions, with the proviso that personal safety is assured or can be secured without loss of the paramedic's life, limb(s) or vital functions.

Givens

1. Patient(s).
2. A partner (exceptions - see **Note** to follow).
3. An operational ambulance (includes air ambulances), or in special situations such as mass casualty incidents, an emergency first response vehicle.
4. Fully operational patient care equipment as per the *MOHLTC Provincial Equipment Standards for Ontario Ambulance Services.*

Note: If a paramedic is on-scene alone in a first response situation, the only Given may be the patient. Under these circumstances, the paramedic will be expected to perform to the best of their abilities and will attempt to meet the standards within the restrictions imposed by the situation.

A. Personal and Patient Safety and Protection

Pre-Arrival At Scene, At Scene

The Paramedic will:

1. On receipt of a call, confirm call information with dispatch. Ensure that patient location and access information is accurate.
2. Use an appropriate route and speed to respond to the scene. Adhere to approved driving and occupant restraint policies and practices. Operate the ambulance and utilize ambulance emergency warning devices in a responsible manner.

   Use an appropriate alternate route if the route selected is impeded due to traffic, weather, etc.
3. On arrival at scene, perform an assessment of the environment. Park the ambulance in a safe place, as close to the point of patient contact as possible. Identify obvious and potential hazards to the patient(s) and crew. Where appropriate, identify routes of entry and exit, e.g. for multiple patient incidents; for potential violence or confrontation.
4. Secure the environment if assessment indicates there is no danger to self or others.
5. If danger exists, or there is uncertainty regarding personal and/or patient safety, request assistance from allied emergency services personnel/agencies. Initiate and/or maintain communication with ambulance dispatch.
6. Use call and scene information to determine the type of equipment and supplies likely to be required to manage problem(s). Unless prohibited by adverse conditions at scene, carry all essential patient care equipment and supplies to the site of initial patient contact.
7. Determine if there is more than one patient and assess the need for additional resources and assistance. If indicated, initiate triage as per Multiple Casualty Incident (MCI) principles.
8. Use EMS rescue and extrication techniques as required.
9. Utilize personal protective equipment according to the *Ambulance Service Patient Care and Transportation Standard* and take appropriate safety measures where necessary.
10. Work with your partner to ensure safe, efficient and timely patient assessment and care. If there is confusion at scene and/or bystanders are interfering with or obstructing patient assessment/management, request police assistance. In the interim, attempt to control the scene while your partner conducts patient assessment or have your partner control the scene. Alternately, instruct another responsible adult to secure the scene.
11. Advise the patient to remain still when deemed necessary e.g. for patient safety, to reduce injury potential and/or to carry out appropriate patient assessments and management.
12. Protect the patient from hazards and exposure to adverse environmental conditions.

13. Ensure safe disposal of sharps in an appropriate sharps container.
14. Secure, lift and carry the patient using appropriate methods and devices.
15. Wash hands after each patient contact. If multiple patients or other circumstances at scene prevent hand-washing after each patient contact, use appropriate alcohol-based hand sanitizer or, at minimum, change gloves between patient contacts and wash hands as soon as circumstances permit.

General Measures

1. Ensure that other operational procedures which impact directly or indirectly on patient care, are carried out on a regular basis. Specifically:
    - Personal cleanliness, dress, conduct, safety and work performance;
    - Cleanliness, decontamination, safety, maintenance and routine checks of the ambulance, ambulance premises, and all patient care related equipment and supplies;
    - Completion and submission of Ambulance Call Reports (ACRs), incident reports and other operational documents;
    - Familiarization with and working in accordance with legislation, standards and pertinent policies and procedures, specifically those dealing with occupational health and safety and communicable diseases;
    - Participation in training and continuing education activities;
    - Assistance with familiarization and orientation of new or less experienced staff.
2. In cases of unusual or suspicious situations, (e.g. suspected foul play, suicides) follow, in addition to the general and specific standards, the procedures outlined in the *Police Notification Standard.*

B. Patient Communication

The Paramedic will:

1. Identify and introduce themselves to the patient and/or to bystanders at scene. Advise the patient that they are there to help. If the patient refuses treatment, see *Section I of the General Standard of Care*.
2. Attempt to determine the patient's name, gender, age (or approximate), and weight (or approximate).
3. Treat the patient and others at scene with respect and courtesy. Exercise tact and diplomacy.
4. Explain assessments and interventions.
5. Provide verbal, and where deemed appropriate, tactile comfort and reassurance to the patient and family/friends, including the unconscious patient. Assume that the unconscious patient is capable of both hearing and understanding.

C. Patient Assessment - General Principles

The Paramedic will:

1. On all scene calls, regardless of dispatch priority coding, assume the existence of serious, potentially life-, limb- and/or function-threatening conditions until assessment indicates otherwise.
2. If a physician is at scene, follow specific procedures as outlined in the *Physician's Orders Standard,* in addition to those outlined in the *General Standard of Care*.

D. Patient Assessment - Environmental Assessments

The Paramedic will, concurrent with or following other assessments:

1. Make scene observations.
2. Seek medical information tags/jewelry, medications, and other forms of patient identification.
3. Collect and transport all patient medications and other relevant identification for review by receiving facility staff. Document reasons if relevant identification is left at scene, e.g. suspect foul play, obvious crime scene; police prevent removal.

E. Patient Assessment - Historical Assessments

The Paramedic will, concurrent with or following the primary survey:

1. Establish the chief complaint: why did the patient or bystander call for an ambulance?
2. Elicit history of present illness or incident. Utilize as many appropriate methods as required, specifically:
    - Question the patient directly; question others at scene.
    - Seek medical or other identification, e.g. medical information tags/jewelry, medication containers.
    - Observe the patient's behaviour.
    - Request/collect information on allergies, medications and relevant past medical history unless prohibited by time and/or the severity of the patient's condition or adverse scene circumstances.
    - Make scene observations.
3. For **inter-facility patient transfers,** obtain the following information and/or transfer documents:
    - pertinent patient history and care information;
    - verbal and/or written treatment orders from the sending physician;
    - transfer papers, e.g. case summary, lab work, x-rays, list of personal effects accompanying the patient, etc.;
    - name(s) of hospital staff and equipment accompanying the patient, where applicable;
    - name of receiving facility and receiving physician, where applicable.

F. Patient Assessment - Physical Assessments

The Paramedic will:

1. Handle the patient gently. Minimize patient movement and manipulation.
2. Immediately on patient contact, perform the **primary survey:**
    - Quickly note the patient's general appearance, degree of distress.
    - Ensure manual C-spine protection if trauma is obvious, suspect or unknown.
    - Assess airway patency, breathing, circulation and level of consciousness and identify critical findings; look for and if possible, quickly expose obvious or suspect external hemorrhage and injury sites; use the **AVPU** mnemonic to assess the level of consciousness - **A**lert, responds to **V**oice, responds to **P**ain; **U**nresponsive.
    - Upon identification of absent/inadequate airway, breathing or circulation (ABCs) immediately perform appropriate interventions to establish, improve and/or maintain the ABCs and to control external wound hemorrhage (see *Section G - Patient Management*).

3. Complete the primary survey within 2 minutes unless major problems are encountered, e.g. persistent airway obstruction, cardiac arrest.

4. Determine the need for rapid transport ("load and go") after completion of the primary survey, i.e. obvious/impending instability of the patient's respiratory, cardiovascular and/or neurologic status, or the potential for instability is high, based on assessment.

5. Initiate rapid transport for all patients who meet "load and go" criteria as specified in the *Load and Go Patients Standard.* Perform further assessment and management enroute.

6. If a patient is determined to be stable after the primary survey, perform further assessments at scene, or transport patient and perform enroute.

7. Initiate cardiac monitoring for the following types of calls:
   - VSAs (**exception** - "obvious" death as discussed in *Patients with Vital Signs Absent (Transportation) Standard*); respiratory arrest; severe respiratory distress;
   - unconscious/decreased level of consciousness;
   - collapse; syncope;
   - chest pain; shortness of breath;
   - CVA; post-ictal patients;
   - overdose (unless known to be a non-toxic ingestion);
   - major or multiple trauma;
   - electrocution;
   - near-drowning/scuba diving incidents;
   - hypothermia; heat exhaustion/heat illness;
   - abnormal vital signs e.g. RR <8-10/minute or >28-30/minute; BP <90; HR >120 or <60/minute, or alterations in rhythm patterns;
   - if requested by sending staff (for inter-facility transfers).

8. Unless contraindicated (see specific standards), cover the patient with a blanket after the primary survey, or at the latest, after the secondary survey. Blanket *before or during* the primary survey if indicated, e.g. severe shock; environmental conditions exacerbating heat loss; the need for privacy.

9. Expose body parts only as required to perform appropriate assessments and management. Attempt to maintain the patient's comfort and privacy. If exposure (and assessment) is limited due to the patient's condition, document specific reasons for omissions when completing the Ambulance Call Report e.g. need to keep patient movement to a minimum, prevent heat loss, institute cooling, control shock, etc., *or,* ensure that routine documentation clearly reflects the situation at scene.

10. Perform the following **secondary survey physical assessments:**
    - elicit history (if not already done);
    - take vital signs;
        - respiratory rate, rhythm and volume;
        - skin colour, condition (wet/dry), temperature;
        - pulse rate, rhythm and volume;
        - blood pressure by auscultation; blood pressure by palpation if constrained by very short transport time, e.g. 5 minutes or less and/or active management of serious illness or injury e.g. primary survey critical findings/interventions;
        - pupillary size, equality and reactivity where indicated (see specific standards);
        - baseline Glasgow Coma Score where indicated (see specific standards);
    - perform complete head to toe assessment or a limited head to toe assessment based on history, patient's condition and/or scene observations;
    - if indicated, perform trauma assessments in medical patients, and medical assessments in trauma patients;
    - if a limited head to toe assessment is done, ensure inclusion of minimum assessments detailed in this manual for specific categories of illness or injury.

Guideline

Unless major and/or multiple problems are encountered, the secondary survey should be completed in 5 minutes or less.

11. If the secondary survey is conducted at scene, make a second transport decision upon completion, or sooner if the patient becomes unstable during the secondary survey. Initiate rapid transport for identified "load and go" problem(s); perform further assessment and management enroute. If the patient is deemed stable and circumstances permit, perform further management interventions at scene, prior to transport.

12. Formulate a working assessment after the primary and/or secondary survey. List and prioritize problems, i.e. according to their impact on the patient's current condition.

Guidelines

For routine (return priority Code 2) **inter-facility transfers**, assessments can generally be limited to the primary survey and vital signs. If transport time is short e.g. 5 minutes or less, blood pressure recording may be limited to systolic blood pressure by palpation only, or omitted at the paramedic's discretion.

G. Patient Management

The Paramedic will:

1. If the patient is vital signs absent (VSA) and meets "obvious death" criteria as per *Patients with Vital Signs Absent (Transportation) Standard,* follow the procedures outlined within the standard.

Note: If the patient has a Do Not Resuscitate (DNR) Order, refer to the *DNR Standard.*

2. Identify primary survey critical findings; perform appropriate interventions to establish/ improve and maintain airway patency, ventilation and circulation and to control external wound hemorrhage.

While protecting the C-spine if spinal injury is obvious or cannot be ruled out:

i. **Clear airway obstruction** utilizing appropriate techniques (as per *Airway Obstruction - General Standard*); position the patient as required to support, protect, improve and/or promote C-spine alignment, airway patency and breathing, with attention to suctioning of saliva, blood and vomitus where necessary. Utilize the recovery position for unconscious, breathing patients in whom spine injury is not suspected or has been ruled out.

ii. **If the patient is VSA, initiate CPR** as per current *Heart and Stroke Foundation of Ontario Guidelines* and as per the *Cardiac Arrest Standards - Adults, Children* in this manual. Perform appropriate SAED protocols as outlined in the MOHLTC *Advanced Life Support Patient Care Standards.*

iii. **Ventilate or assist ventilation if the patient is apneic or breathing appears inadequate as evidenced by signs of hypoxia (e.g. decreased LOC, cyanosis) according to current *HSFO Guidelines*.**

Provide intermittent positive pressure ventilation (IPPV) utilizing an appropriate device/ technique, e.g. bag valve mask (BVM) with reservoir; ventilator.

iv. Using an appropriate oxygen administration device, **administer high concentration oxygen** (as close to 100% as possible). Apply to patients with one or more critical findings and/or presenting problems as indicated in the *Oxygen Therapy Standard,* or if there is doubt regarding the adequacy of patient oxygenation.

If an oxygen mask is not tolerated, e.g. patient agitated, combative, complaining of feeling suffocated, or vomitus/oral secretions are excessive, switch to nasal cannula at 6 litres per minute.

Guideline

Refer to the *Oxygen Therapy Standard* for guidelines regarding field oxygen therapy for patients with chronic obstructive pulmonary disease (COPD).

   v. **Control** trauma related **external hemorrhage** utilizing appropriate techniques as indicated in the *Soft Tissue Injuries (Wounds) Standard* or as specified in other standards for *non-trauma related* external hemorrhage.

   vi. **If shock is obvious or impending:**

   - Administer high concentration oxygen.
   - Keep the patient warm **- exceptions:** assessment indicates shock due to heat illness or septic shock with high fever (obvious, suspect), or the patient is obviously febrile , e.g. small child (be cautious of over-cooling the patient).

3. Rapidly reassess the patient after each critical intervention or series of interventions. Immediately perform further or repeat interventions as required based on the patient's response. Ensure appropriate equipment and technique is being applied.

4. Initiate appropriate management of **other life/limb/function-threatening conditions** as detailed in specific *Standards of Care* in this manual and the *Advanced Life Support Patient Care Standards* (i.e. symptom relief, semi automatic external defibrillation).

5. If the patient is stable (or stabilized), initiate appropriate management for **non-critical conditions** detailed in specific *Standards of Care* in this manual.

6. Continually monitor (observe) the patient, and re-evaluate as necessary. If deterioration is noted with regard to airway patency, adequacy of breathing, circulatory status and/or level of consciousness, repeat the primary survey and initiate immediate management of identified problems. Recheck equipment and techniques. Repeat vital signs every 10 minutes at minimum, and with greater frequency as per specific *Standards of Care* in this manual.

7. Determine the CTAS level of the patient.

8. Attempt to ensure patient comfort and privacy. Blanket as soon as feasible, optimally after the primary survey.

9. Secure, lift and carry the patient to and from the ambulance.
   - If the patient is a child, consider allowing the parent to carry the child unless contraindicated by specific illness/injury.
   - Determine whether the patient can be carried safely by self and partner. If deemed unsafe, request and direct others at scene to assist with the task.
   - If the patient refuses to be carried, attempt to convince the patient to be carried. If the patient walks or is walked to the ambulance, document specific reasons.

10. Secure the patient, stretcher and equipment inside the ambulance.

11. Position or re-position the patient in order to support, protect, improve and/or promote as required:
    - C-spine alignment;
    - airway patency;
    - breathing;
    - venous return;
    - extremity injury;
    - patient comfort.

Guidelines

Transport Positions:

1. **Decreased Level of Consciousness/Unconscious Patients (Non-Trauma)**
    - Left lateral or semi-prone (recovery) position; if the patient is transported supine, the patient should be capable of clearing their own secretions i.e. have an intact gag reflex, and/or suctioning and other maneuvers should be employed to keep the airway clear.
2. **Head and/or Spinal Injured Patients (Injury Obvious or Suspect)**
    - Supine, secured to a long backboard, or on an adjustable break away stretcher +/- spinal immobilization extrication device;
    - Tilt board/adjustable break away stretcher to the left side if the patient is retching/ vomiting or if oral secretions are likely to compromise the airway;
    - Elevate head of board/adjustable break away stretcher approximately 30° if respiratory distress/head injury is evident.
3. **Hypotension/Shock (Non-Trauma)**
    - Supine;
    - If vomiting, retching, or excessive oral secretions are present, position in left lateral or semi-prone (recovery) position.

4. **Obstetrical Patients**
   - i) **Patient <20 weeks gestation:**
     - position of comfort or a position as dictated by concurrent problems.
   - ii) **Patient >20 weeks gestation:** the objective is to relieve/eliminate the pressure of the uterus on the inferior vena cava.
     - a) *Non-trauma in which spine injury is not suspect:*
       - left lateral position or supine with pillows/blanket roll under the right buttock;
       - if the patient is in active labour - position the patient on the left side, with knees curled up to the chest, or, position the patient supine with the buttocks elevated.
     - b) *Head/spine injury obvious/suspect; hypotension/shock*
       - as for non-pregnant patients, *plus* tilt the board/adjustable break away stretcher to the left side or prop up the board/adjustable break away stretcher on the left side.

5. **Partial Airway Obstruction (Non-trauma):**
   - Sitting, semi-sitting or patient's preferred position.

6. **Respiratory Distress (Non-trauma or trauma where head/spine injury is not suspect):**
   - Semi-sitting or sitting;
   - If there is a concurrent decrease in level of consciousness, position the patient in the left lateral position, with the head elevated or if possible, semi-sitting; use judgement.

7. **Vomiting, Difficulty Clearing Oral/Nasal Secretions (in the alert, conscious patient, not immobilized for trauma):**
   - Sitting up, and if necessary, leaning forward to clear secretions.

Note: For suspect air embolism related to scuba diving accidents, see the *Scuba Diving Injuries/Disorders Standard.*

H. Patient Transport

The Paramedic will:

1. Make a decision regarding receiving facility and initiate transport of the patient as confirmed or directed by:
   - an ambulance communications officer, or
   - an attending physician, with dispatch confirmation, or
   - a coroner, with dispatch confirmation, or
   - a base hospital physician, or
   - midwife, with dispatch confirmation, or
   - approved local transfer guidelines, or
   - the patient, with dispatch approval.

   In the absence of direction, transport to the closest or most appropriate hospital emergency unit capable of providing the medical care apparently required by the patient.

2. Use an appropriate route and speed to transport the patient to a receiving facility. Use an appropriate alternate route if the route selected is impeded. Adhere to approved driving and occupant restraint policies and practices. Operate the ambulance and use ambulance emergency warning devices in a responsible manner.

3. If the patient deteriorates during transport, and survival to the directed receiving facility is questionable, transport the patient to the closest or most appropriate hospital emergency unit capable of providing the medical care apparently required by the patient. Immediately notify dispatch of any destination change, and notify or ask dispatch to notify the new receiving facility.

Guideline

Some calls may require additional assistance (at scene or enroute) from other paramedics or firefighters e.g. VSAs, multiple trauma cases, difficult airway management.

I. Patient Refusal of Treatment and/or Transport

The Paramedic will:

1. If, where interventions are deemed necessary, the patient refuses treatment and/or transport despite reasonable efforts to convince the patient otherwise, explain the possible consequences of such refusal.
2. Obtain/provide appropriate documentation on the **Refusal of Service** section of the Ambulance Call Report (ACR):
    - Patient's signature or signature of a recognized substitute decision-maker (e.g. legal guardian, attorney for personal care, spouse, parent, other as defined in relevant legislation), indicating refusal of treatment and/or transport, and understanding of explanations provided regarding the consequences of refusal (Capacity Evaluation);
    - Patient's or substitute decision-maker's refusal to sign the **Refusal of Service** section of the ACR (in the event this should occur, since there is no legal obligation to sign the ACR);
    - Signatures of witnesses to the patient's refusal of service (if witnessed);
    - Signatures of witnesses to the explanation provided to the patient regarding the possible consequences of refusal of service (if witnessed);
    - Signatures of paramedics.
3. Carry out emergency treatment and transport if the paramedic determines:
    i) that the patient is at risk, if treatment is not administered promptly, of suffering serious bodily harm, and, is unable to understand the information that is relevant to making a decision concerning the proposed treatment and unable to appreciate the reasonably foreseeable consequences of accepting or refusing the treatment, **or**
    ii) that the patient is a child/adolescent who is unable to understand the information that is relevant to making a decision regarding the proposed treatment and is therefore not capable to make an informed decision regarding the forseeable consequences of accepting or refusing treatment, **and**
    iii) it is not reasonably possible to obtain a consent or refusal on the person's behalf, or the delay required to do so would prolong suffering or put the person at risk of suffering serious bodily harm.

4. If the paramedic is unable to perform emergency treatment (as per criteria outlined under *point 3*) without police assistance e.g. the patient is violent, or extremely hostile and/or the patient is deemed to be dangerous to themselves or others (based on current behaviour and present or past history), then carry out the following actions:
    - Advise dispatch.
    - Request police assistance.
    - Use physical restraint only if all reasonable verbal efforts fail to calm the patient and elicit cooperation; use only the minimum restraint required to protect the patient from endangering themselves or others. (See *Restraint of Patients Standard*)
    - Remain at the scene until police arrive.
    - Maintain communication with dispatch while at scene.
    - Initiate transport with a police accompaniment in the patient compartment if police agree to take the patient into custody for medical assessment.
    - Document reasons for actions taken.
5. If a patient refuses treatment or transport and a paramedic determines the patient is capable of understanding the implications of refusal, (Capacity Evaluation) or police refuse to take the patient into custody for medical assessment (as per *point 4*):
    - If serious or life-threatening illness/injury is obvious or suspect, attempt to contact an EMS supervisor for advice. If a supervisor is not available, attempt to contact a physician for advice, e.g. base or local hospital physician at a local emergency department or the patient's family physician.
    - If the patient continues to refuse treatment, even with a physician's advice to the contrary, release the patient into the care of an apparently responsible adult. For the individual assuming responsibility for the patient, provide instructions regarding observation and patient management, physician follow-up, possible complications and other information as deemed appropriate. If no responsible adult is available, release the patient into their own care with similar instructions; attempt to obtain the name and telephone number of a contact person for purposes of patient follow-up.
6. For **inter-facility transfers of emotionally disturbed patients,** follow procedures as outlined in *Emotionally Disturbed Patients - Care and Transportation Standard.*

J. Patient Care Enroute to the Receiving Facility

The Paramedic will:

1. Attend to the patient at all times - **exception**: if a hospital/health facility escort or transfer team is accompanying the patient and is responsible for attending to the patient.
2. Complete the history and appropriate secondary survey physical assessments (if not completed or completion is not prohibited by short transport time e.g. 5 minutes or less, and/or severity of the patient's condition).
3. Initiate and/or maintain appropriate management interventions.
4. Ensure continuous monitoring and observation of the patient with respect to:
    - airway, breathing, circulation (ABCs) and level of consciousness;
    - cardiac monitoring where applicable;
    - development of problems/complications expected on the basis of working assessment.
5. If deterioration is noted in one or more of the ABCs or in the level of consciousness, repeat the primary survey and any necessary interventions required to improve/restore airway patency, breathing, circulation and/or level of consciousness.
6. Have equipment/supplies accessible and, where applicable, set up to deal with expected problems/complications.
7. Vital signs are to be monitored appropriate to a patient's condition. Repeat vital signs every 5-10 minutes for CTAS 1 and 2 patients **unless** prohibited by short transport times e.g. 5 minutes or less, and/or need to stabilize/re-stabilize airway, breathing, circulation, level of consciousness, and/or if the patient is violent, agitated, uncooperative or at risk of further compromise if vital signs are attempted e.g. child with partial airway obstruction.
8. Give the patient nothing by mouth (keep NPO) unless otherwise indicated in specific standards in this manual.
9. Maintain communication with the patient. Continue to provide verbal and/or, if deemed appropriate, tactile comfort and reassurance.
10. Maintain a comfortable temperature for the patient in the patient compartment. Adjust temperature if needed as per specific patient illness/injury standards.
11. If the patient is or becomes agitated:
    - reassess the ABCs, level of consciousness; manage identified problems;
    - restrain the patient if endangering themselves and/or others;
    - keep light low inside the patient compartment as long as it does not interfere with appropriate patient monitoring and care;

K. Radio Reporting of Patient Care to Receiving Facility

The Paramedic will:

1. Transmit the radio report while enroute to the receiving facility.
2. Await hospital or ambulance communications officer (if being relayed) acknowledgement that they are ready for the report before beginning transmission.
3. Provide the following information on CTAS 1 and CTAS 2 patients, either direct to the receiving facility - or to an ambulance communications officer - all of the following points, with optional information in bold:
   - unit number identification;
   - number of patients and associated age, gender, degree of distress, including level of consciousness for each;
   - chief complaint(s), **brief history of present illness/injury;**
   - **vital signs, brief summary of working assessment problem(s), procedures performed and patient's response;**
   - CTAS level, destination and estimated time of arrival.
4. Complete the radio report within 2 minutes, optimally within 1 minute for most calls.

L. Radio Patch to Base Hospital or Other Attending Physician

The Paramedic will:

1. Initiate the radio patch from the scene or enroute as deemed necessary by the paramedic.
2. Await base hospital acknowledgement that they are ready for the report before beginning transmission. State paramedic qualification (PCP, ACP, CCP).
3. Provide a clear, concise report on the patient's condition (see *#3 Radio Reporting of Patient Care to Receiving Facility*) and state the purpose of your patch (e.g. advice, drug order, other management).
4. Complete the radio report within 2 minutes, optimally 1 minute.

M. Transfer of Responsibility for Patient Care

The Paramedic will, upon arrival at the receiving facility:

1. Check with receiving staff to determine what is to be done with the patient. Assist receiving staff members with patient care as required/requested and if within the paramedic's scope of practice. Attend to and/or have partner attend to the patient while awaiting receiving staff acceptance of the patient.
2. With respect to transfer of patient care responsibility:
   a) Provide a verbal report to receiving medical or nursing staff, to include:
      - current CTAS level;
      - a brief history of the patient's current problem(s) and relevant past medical history;
      - pertinent physical findings;
      - a brief summary of management at scene/enroute;
      - the patient's response to treatment, including most recent vital signs;
      - the reason for transfer in cases of inter-facility transfers.

   b) If receiving staff refuse to accept responsibility for the patient or if it appears likely there will be a prolonged delay in accepting the patient, carry out one or more of the following actions:
      - if a delay is likely, advise dispatch;
      - if the patient is refused, advise dispatch; request receiving staff to attempt contact with the sending physician, the patient's family physician, or where available, a base hospital physician;
      - remain on standby for return to service and advise receiving staff that the crew and vehicle will have to depart if called for an emergency;
      - follow specific local policy and/or transfer guidelines.
3. Transfer the patient's personal effects including identification and medication, if possible, to receiving staff, if not already done.
4. Transfer patient records and documents to the receiving staff in cases of inter-facility transfers.

N. Documentation of Patient Care

The Paramedic will:

1. For each call type detailed in the MOHLTC *Ambulance Call Report Completion Manual,* complete and sign an Ambulance Call Report (ACR) in accordance with the procedures detailed in the manual and Base Hospital Guidelines. Complete the ACR as soon as possible following the call and in any event, prior to the end of the scheduled shift during which the call occurred, and provide the receiving hospital with a copy of the ACR.
2. Document a concise description of assessment findings and pertinent scene observations. Whenever feasible, use the patient's own words to state and describe the chief complaint and associated history. Include pertinent positive and negative findings from historical and physical assessments, and changes in the patient's status as a result of management interventions.
3. If minimum required assessments and/or interventions are not carried out, document specific reasons on the ACR or ensure that routine documentation clearly reflects the situation at scene, e.g. "patient agitated, aggressive; refusing examination".
4. Document all refusals of service and refusals of responsibility, and reasons if known, e.g. patient's refusal of treatment/transport or refusal to be carried into/out of an ambulance; receiving staff's refusal to accept a patient; refusals to sign the ACR by patients/staff.
5. Initial all management interventions.
6. Keep patient information confidential:
   - provide information regarding a patient's condition and care only to receiving medical or nursing staff or other health professionals assuming direct responsibility for patient care;
   - provide only general information, e.g. patient identification, severity of condition, to duty police officers requesting information at scene or hospital. Document police officer's name and/or badge number. Alternatively, advise police to follow up with the ambulance service manager/operator regarding information requests.
7. For **inter-facility transfers,** document receipt of the following information and/or items from sending facility staff:
   - pertinent patient history and care information; verbal and/or written treatment orders from the sending physician;
   - transfer papers, e.g. case summary, lab work, x-rays, list of personal effects; patient's personal belongings;
   - name(s) of hospital staff and equipment accompanying the patient, where applicable.
8. In addition to the ACR, complete incident reports as required in accordance with the MOHLTC *Documentation Standards.*

Patient Care Skills

A. Equipment Use

With respect to patient care equipment currently used in the Ontario ambulance system, the paramedic will:

1. Operate the equipment appropriately.
2. Perform and document routine checks, maintenance and/or cleaning.
3. Notify appropriate ambulance service management staff of identified problems, e.g. need for battery replacement, repairs.
4. Be able to state:
   - the purpose of the equipment;
   - indications for use;
   - absolute and other contraindications to use (if any);
   - common complications associated with use (if any).
5. Use equipment appropriate to the patient's size.

B. Patient Care Interventions

With respect to each required patient care intervention, the paramedic will:

1. Perform the intervention appropriately.
2. Be able to state:
   - the purpose of the intervention;
   - indications for performance of the intervention;
   - absolute and other contraindications to performance of the intervention (if any, if applicable);
   - common complications associated with performance of the intervention (if any, if applicable).
3. Where applicable, apply the intervention to adults, children and infants using techniques and equipment appropriate to each group.

C. Patient Care Skills List - Minimum Requirements

See *Table of Contents* for standards which are relevant to skills specified in the minimum skills list.

1. Performance of patient care activities in accordance with the *General Standard of Care* (including medical, trauma and pediatric standards) and MOHLTC approved training programs, specifically with respect to:
   A. Personal and Patient Safety and Protection.
   B. Patient Communication.
   C. Patient Assessment:
      - General Principles;
      - Environmental Assessments;
      - Historical Assessments;
      - Physical Assessments;
      - Patient Management;
      - Patient Transport;
      - Patient Refusal of Treatment and/or Transport;
      - Patient Care Enroute to the Receiving Facility;
      - Radio Reporting of Patient Care to Receiving Facility;
      - Radio Patch to Base Hospital or Attending Physician;
      - Transfer of Responsibility for Patient Care;
      - Documentation of Patient Care.
2. Management of airway obstruction secondary to foreign body (choking) - conscious/ unconscious patient (as per current Ontario Heart and Stroke Foundation guidelines).
3. Basic cardiopulmonary resuscitation - 1- and 2-person CPR; semi-automatic external defibrillation (SAED) (where authorized).
4. Airway positioning/opening techniques:
   - head tilt/chin lift;
   - jaw thrust;
   - modified jaw thrust.
5. While protecting the C-spine if indicated, patient positioning for:
   - resuscitation;
   - spontaneously breathing patient;
   - spontaneously breathing patient whose level of consciousness is reduced;
   - vomiting patient.

6. Suctioning utilizing portable and on-board suction devices:
    - oropharynx;
    - nasopharynx.
7. Insertion of airway adjuncts:
    - oropharyngeal airway;
    - nasopharyngeal airway.
8. Oxygen administration:
    - selection of appropriate oxygen administration devices, flow rates and concentrations;
    - application and utilization of oxygen administration devices.
9. Manual ventilation techniques:
    - bag valve mask ventilation; 1- and 2-person techniques including use of oxygen reservoir;
    - mechanical resuscitator ventilation, including use of oxygen litre flow adapter and use of devices which can be operated in automatic or manual modes.
10. Cardic monitoring.
11. Control of external wound hemorrhage.
12. Wound care - general principles, plus management of:
    - impaled object;
    - protruding organ/tissue;
    - penetrating wound;
    - complete/partial amputation/avulsion.
13. Wound dressing and bandaging - general principles and specific to body parts:

Head
Cheek/Jaw
Ear/Forehead
Eye
Neck
Shoulder
Arm/Leg
Elbow/Knee
Hand/Foot
Abdomen
Groin
Hip
Buttocks
Chest

14. Spinal immobilization techniques:
    A. cervical immobilization;
    B. cervical immobilization in non-neutral position;
    C. helmet removal;
    D. log-rolling a supine patient;
    E. log-rolling a prone patient;
    F. securing a supine patient to a long backboard;
    G. securing a patient on/in an adjustable break away stretcher;
    H. applying and securing a long backboard to a standing patient;
    I. controlled patient extrication (patient in sitting position) using a spinal immobilization extrication device;
    J. emergency rapid extrication (patient in sitting or other position) using a long backboard;
    K. spinal immobilization in water.

15. Extremity immobilization and splinting - general and specific to body parts:

Upper Body

Acromioclavicular (AC) joint
Clavicle
Elbow
Fingers
Forearm
Hand
Humerus
Ribs
Scapula
Shoulder
Wrist

Lower Body

Ankle
Femur
Foot
Hip
Knee
Lower Leg
Pelvis
Toes

16. Lifting and moving a patient:
    a) using proper body mechanics.
    b) using the following methods:
        - log-roll;
        - fore and aft lift;
        - sheet pull.
    c) using the appropriate device:
        - stair chair;
        - adjustable break away stretcher;
        - long backboard;
        - spinal immobilization extrication device;
        - lift assist cot;
        - lift in cot;
        - folding stretcher;
        - pole stretcher;
        - improvised devices;
        - other devices as appropriate.
17. Assistance in self-administration of a patient's prescribed medications, or where authorized, administration of symptom relief medications.
18. Intravenous fluid therapy - monitoring and maintenance (includes heparin and saline lock devices).

Air Ambulance Utilization Standard

A. Requesting On-Scene Response by Helicopter

1. During their scene and patient assessments, the paramedic will identify the presence of operational and clinical guidelines that could result in the request for an on-scene response by helicopter.

2. Upon identifying the on-scene call may meet the operational guidelines, the paramedic will determine if the patient meets the clinical guidelines before requesting an on-scene response by helicopter.

   Note: If the patient cannot be easily reached by land ambulance (e.g. difficult land access to ravines/valleys, large parks/conservation areas, furrowed or heavily snow covered fields, flooded areas; sites without road access such as islands; geographically isolated places such as lumber and mining operations, wilderness camps), the paramedic will request an on-scene response by helicopter whether or not the clinical guidelines are met.

3. Upon identifying the patient meets the clinical guidelines, the paramedic will estimate the time to travel by land ambulance from the scene to the closest appropriate hospital*. If the travel time is greater than 30 minutes or there are multiple patients who meet the clinical criteria and the local land ambulance resources are overwhelmed, the paramedic will contact dispatch and request an on-scene response by helicopter.

   *Closest appropriate hospital for on-scene call patients assessed as meeting the Field Trauma Triage Guidelines is the closest lead trauma hospital. On-scene call patients assessed as meeting the Field Trauma Triage Guidelines will bypass other hospitals to go to the closest lead trauma hospital if: (a) the closest lead trauma hospital is less than 30 minutes away by land ambulance, or (b) air ambulance helicopter is available to respond on-scene for direct patient evacuation to the lead trauma hospital. If at any time the paramedic is uncomfortable with the safety of the patient during transport to the closest lead trauma hospital and bypassing other hospitals, the paramedic may divert to the closest hospital with an emergency department.

   Note: Paramedics will divert to the closest hospital with an emergency department when, in their judgement, the patient could not survive transport to the nearest Lead Trauma Hospital (e.g. complete airway obstruction; no spontaneous respirations; no palpable carotid pulse). However, VSA patients with penetrating trauma to the chest or abdomen may be transported to a Lead Trauma Hospital.

   Note: The 30 minutes is an approximation and includes extrication time, traffic and road/weather conditions, and those factors which affect response/transport time but cannot be predetermined.

   Note: Specific geographic response zones may be used, rather than the 30 minutes time guideline.

4. The paramedic will provide the ambulance communications officer with the operational and clinical guidelines identified. Also, in order for the ambulance communications officer to determine if a helicopter response and transport will be quicker than land ambulance, the paramedic will provide the ambulance communications officer with the estimated time to prepare the patient for transport, identify separately any time required for patient extrication, the estimated land ambulance driving time to the closest appropriate hospital* and any additional information as required.
5. If in the judgement of the paramedic or ambulance communications officer an on-scene helicopter response is appropriate under the circumstances, even though the operational and/or clinical guidelines have not been met, a helicopter response should be requested.
6. Upon confirmation the helicopter is responding, the paramedic will designate a Landing Site Coordinator (see *Section C – Landing Site Safety and Coordination*).
7. The paramedic will provide patient care until responsibility has been transferred to another care provider of equal or higher level.
8. Land ambulance paramedics will not delay patient transport by waiting for the helicopter, unless the helicopter can be seen on its final approach to the scene. If the helicopter is enroute but not on final approach to the scene, and the land paramedics have the patient in their ambulance, then the land ambulance will proceed to the closest local hospital with an emergency department. The helicopter will proceed to that local hospital and, IF APPROPRIATE, assist hospital personnel prepare the patient for rapid evacuation to the most appropriate hospital/lead trauma hospital.
9. If the call's circumstances and patient(s) fail to meet the guidelines and a helicopter is known to be responding based on the merits of the initial request for ambulance service, the paramedic will contact the CACC/ACS and advise that an on-scene response by helicopter is not required and why.

B. Determining Criteria for Helicopter Response

Requests for on-scene helicopter response should meet at least one of the bulleted **Operational Guidelines** plus one of the bulleted **Clinical Guidelines**. However, if in the judgement of the paramedic or ambulance communications officer an on-scene helicopter response is appropriate under the circumstances, even though the operational and/or clinical guidelines have not been met, a helicopter response should be requested.

1. **Operational Guidelines:**
   - the land ambulance requires more than 30 minutes to reach the scene and the helicopter can reach the scene quicker;
   - the land ambulance requires more than 30 minutes to travel from the scene to the closest appropriate hospital* and the helicopter can reach the scene and transport the patient to the closest appropriate hospital* quicker than the land ambulance;
   - the estimated response for both land and air is greater than 30 minutes, but approximately equal, and the patient needs advanced paramedic level care which cannot be provided by the responding land ambulance;
   - there are multiple patients who meet the clinical guidelines and the local land ambulance resources are overwhelmed;
   - the patient cannot be easily reached by land ambulance, whether or not the clinical guidelines are met;
   - if in the judgement of the paramedic or ambulance communications officer an on-scene helicopter response is appropriate under the circumstances, even though the operational and/or clinical guidelines have not been met, a helicopter response should be requested.

2. **Clinical Guidelines:**

Known Clinical Conditions

Patients meeting any one of the following conditions should be transported to the closest lead trauma hospital:

Field Trauma Triage Guidelines

- spinal cord injury with paraplegia or quadriplegia;
- penetrating injury to head, neck, trunk or groin;
- amputation above wrist or ankle;
- adult patients with a Glasgow Coma Scale less than or equal to 10;
- If adult GCS is greater than 10, any two of the following:
  (1) any alteration in level of consciousness;
  (2) pulse rate less than 50 or greater than 120;
  (3) blood pressure less than 80 systolic (or absent radial pulse);
  (4) respiratory rate less than 10 or greater than 24.
- Pediatric Trauma Score of less than or equal to 8;
- paramedic's judgement that the patient requires assessment and treatment at a lead trauma centre.

Patients meeting any one of the following conditions should be transported to the closest appropriate hospital:

Medical

- acute abdomen (suspect obstruction or perforation);
- acute headache (associated with decreased level of consciousness, altered mental status or neurological deficits);
- acute respiratory failure or distress;
- chest pain (suspect AMI or other serious underlying disorder) and/or potentially lethal dysrythmia;
- overdose/poisoning (altered level of consciousness or quantity is potentially lethal and/or requires specialized treatment);
- resuscitated from respiratory or cardiac arrest;
- status epilepticus;
- unstable airway or partial airway obstruction.

Environmental

- decompression sickness needing hyperbaric oxygen therapy;
- electrocution with signs of significant electrical injury;
- hyperthermia (suspect core temperature of greater than 42°C and an altered level of consciousness with or without diaphoresis);
- hypothermia (suspect core temperature of less than 32°C with or without shivering reflex);
- major burns (2^{nd} degree greater than 20%, 3^{rd} degree greater than 10%);
- near drowning.

Obstetrical

- abnormal presentation (i.e. shoulder, breech or limb);
- multiple birth;
- pre-eclampsia/eclampsia;
- premature labour (gestation less than 36 weeks);
- premature rupture of membranes;
- umbilical cord prolapsed;
- vaginal bleeding (suspect abruptio placenta or placenta previa).

Unknown Clinical Conditions or Limited Clinical Detail (Injury Assumed)

Mechanism of Injury

Patients presenting with the following should be transported to the closest lead trauma hospital:

- fall from a height greater than 5 metres;
- pedestrian struck by vehicle where speed is greater than 15 km/hr;
- person ejected from vehicle where speed greater than 30 km/hr;
- vehicular collision where the combined speed is greater than 30 km/hr or death of co-occupant;
- vehicle rollover with unbelted occupant(s) or death of co-occupant;
- vehicle struck a fixed object (e.g. rock cut, tree, pole) or large animal (e.g. moose, deer, bear).

C. Landing Site Safety and Coordination

One rescuer (selected from either the police, fire, or ambulance personnel) should be chosen to assume the role of Landing Site Coordinator and take the following actions to coordinate the safe landing of the helicopter while maintaining the safety of the scene:

1. Wear Safety Apparel

a) don and secure a high visibility vest or coat;
b) don and secure a safety helmet with visor;
c) wear safety goggles or safety eyewear.

2. Landing Site Selection

The helicopter's pilot-in-command is responsible for selecting the landing site and has the final decision on whether or not to land. Using the helicopter's airborne vantage point, the pilot-in-command will select a site that best meets the following conditions:

a) a site that will not affect the rescue efforts underway;
b) a clear area of approximately 30 metres x 30 metres;
c) a safety area, extending approximately an additional 30 metres for the purpose of controlling vehicle and personnel access during landing and take-off;
d) the landing site should be away from overhead wires and utility poles;
e) the surface should be flat as possible;
f) no loose debris should be within the landing site or the safety area; check ditches;
g) gravel and sand sites should be avoided, if possible, due to the potential of injury from flying dust particles and reduced visibility.

3. Site Safety

a) no vehicles or personnel are allowed within the landing site and safety area during landing and take-off;
b) vehicle doors and access compartments should be closed;
c) stretchers should be left in the ambulance and all loose articles secured;
d) if requested by the flight crew, the Landing Site Coordinator will stand at the upwind edge of the safety area, back to the wind and facing the site, to maintain security during the landing and take-off;
e) firefighters should not lay out hoses; any lines that have been laid should be charged;
f) if site security is compromised, such as personnel or vehicles entering the safety area, the Landing Site Coordinator is to wave off the helicopter by crossing outstretched arms over their heads.

4. Safely Working Around A Helicopter

a) stay out of the safety area and landing site during landing and takeoff;
b) approach or depart only when directed by a member of the air crew;
c) do not approach the helicopter from the rear as the tail rotor is difficult to see;
d) if on uneven ground, approach or depart from the downhill side;
e) carry all equipment horizontally at or below waist level, never over shoulder;
f) ensure hats, scarves, gloves, glasses and any other loose articles are secure before entering the safety area.

D. Other Use of Helicopters

1. The helicopter will not be permitted to respond to night calls which require a landing at a site other than night licensed airports, helipads or night approved remote landing sites.
2. a) A helicopter will not normally be diverted from a Code 4 response to an on-scene call unless authorized by the Ornge Communications Centre (OCC);
   b) Helicopters assigned on lower priority calls may be diverted to on-scene calls if the request meets the guidelines for on-scene response (see *Section B – Determining Criteria for Helicopter Response*). If the air crew has already made contact with the lower priority patient the OCC must approve the diversion. If the lower priority patient is already on board the helicopter the flight paramedic's base hospital physician must approve the diversion;
   c) When a helicopter is diverted, as provided above, the ambulance communications officer responsible must ensure that all parties are advised.
3. Helicopters will not be permitted to conduct search and rescue calls. For purposes of this section, Search and Rescue is defined as:
   - Looking diligently for person(s) whose whereabouts are unclear and/or require removal from a location by specialized tools such as hoists.

4. a) In those cases where land ambulance can reach the patient(s) and an on-scene response by helicopter is appropriate, the ambulance communications officer will assign a land ambulance as tiered response and continue the land response until the flight crew request the land ambulance be cancelled.
   b) In those cases where land ambulance is providing first or tiered response to air ambulance, the CACC/ACS with their vehicle first on-scene will inform the other communication centre as events occur.
   c) The crew reaching the scene first is responsible for triage and scene management. The highest medically trained personnel on-scene will normally be the authority in patient/medical matters. If both air and land ALS crews are on-scene the crew transporting the patient(s) will have authority over patient/medical matters.

DNR Standard

This standard is currently under review by the DNR Taskforce. Paramedics are directed to follow the current *Policy 4.6 - Inter-Facility Do Not Resuscitate Orders* (formerly Appendix 59A in the BLS Patient Care Standards version 1.1) until such time as the new DNR Standard is approved and released.

Policy 4.6 (January 25, 1999) has been provided on the following pages for reference purposes.

Policy 4.6 – Inter-Facility Do Not Resuscitate Orders

Purpose

To provide direction and a set of standardized guidelines for Emergency Medical Attendants (EMAs)/ Paramedics when a patient with a valid **Do Not Resuscitate** order requires transport by ambulance between two health care facilities, or to a patient's home.

NOTE: This policy DOES NOT APPLY to orders or directions given by a family member or other person in settings or situations outside of this policy, nor does it cover other types of Do Not Resuscitate situations which are not within the scope of this policy.

A Do Not Resuscitate order made under this policy applies to those patient care procedures that are considered part of cardiopulmonary resuscitation (CPR) and does not preclude the use of other types of treatment or care by the ambulance crew.

Assumptions

In circumstances covered by this policy, where the policy has been followed appropriately by an attending EMA/Paramedic, a sending facility will not hold the EMA/Paramedic responsible for:

a) honouring or not honouring a **Do Not Resuscitate** order during ambulance transport time;

b) not honouring a **Do Not Resuscitate** order in situations where it would be clearly unreasonable for an EMA/Paramedic to honour the DNR order; (See 4 (b) page 3)

c) Health care staff of all hospitals and health care facilities will co-operate with area ambulance services in carrying out their responsibilities with respect to this policy.

d) Hospitals and health care facilities will promptly accept patients who have died during ambulance transfer and have subsequently been transported to their facility. This includes patients who have been pronounced dead enroute (via radio) by a base hospital physician.

Directives:

1. An EMA/Paramedic will, subject to paragraph 4, recognize and honour during ambulance transport time, a Do Not Resuscitate order made on behalf of a patient when the following conditions are met:
   (a) The ambulance transport requested originates from a hospital or health care facility and will terminate at either another hospital or health care facility, or at a patient's home, **AND**
   (b) On arrival at the Sending Facility there is a **Do Not Resuscitate** order that is evidence from the Sending Facility staff that one (1) or more of the following four (4) conditions are fulfilled:
      (i) the **Do Not Resuscitate** order reflects the patient's most recent wishes, as expressed when capable, not to be resuscitated, or
      (ii) a current treatment plan exists to which the patient, when capable, has consented, in accordance with the Health Care Consent Act, 1995, where the treatment plan expressly excludes CPR, or
      (iii) a current treatment plan exists which another person has consented to on an incapable patient's behalf, in accordance with the Health Care Consent Act, 1995, where the treatment plan expressly excludes CPR, or
      (iv) the physician's current opinion is that resuscitation would be futile or of no benefit to the patient, **AND**
   (c) The **Do Not Resuscitate** order contains an express and unambiguous statement which clearly indicates which of the four conditions described above has or have been met. The ambulance crew should read the order carefully to ensure that the express and unambiguous statement of **Do Not Resuscitate** is in the written order.
2. Notwithstanding paragraph 1, if upon arrival at the sending facility, sending staff (including an escort) are unable to specifically state[1] which of the four conditions detailed in paragraph l(b) the DNR order is based on, an EMA/Paramedic will, subject to paragraph 4, recognize and honour during ambulance transport time, a **Do Not Resuscitate** order made on behalf of a patient when all of the following conditions are met:
   a) a copy of the DNR order from the patient's chart is provided to the ambulance crew;
   b) the DNR order is signed by a physician and dated;
   c) the DNR order contains the express and unambiguous statement "Do Not Resuscitate"; and
   d) the patient will be accompanied by an escort from the sending facility who is responsible for the patient and for honouring the DNR order.

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[1] Reasons for being unable to state which of the four criteria the DNR order fulfills, include: the on duty nursing or physician staff were not directly involved in the DNR decision-making process; the patient's attending physician is unavailable to provide the relevant information; the information cannot be readily located on the patient's chart or it may be located with the patient's family.

3. Subject to paragraph 4, an EMA/Paramedic is not required or expected to go behind and investigate a **Do Not Resuscitate** order in order to assure himself or herself that one or more of these four conditions has or have in fact been met.

4. An EMA/Paramedic **SHOULD NOT HONOUR** a **Do Not Resuscitate** order where:
   a) they have a sound reason to believe that the order is not, in fact, based on at least one of the four conditions set out in Paragraph l(b), or
   b) it would, due to the immediate circumstances in the ambulance, be clearly unreasonable to honour the order, e.g. combative or aggressive relative or escort who demands that the ambulance crew initiate cardiopulmonary resuscitation, despite the existence of a valid DNR order (under paragraph 1 or 2) and despite the crew's attempts to reason with the relative or escort; or
   c) the patient now appears to the ambulance crew to be capable and expresses the wish to be resuscitated in the event that the patient experiences cardiac or respiratory arrest; or
   d) the patient requests that he or she be resuscitated, but the request is vague, incomplete or ambiguous such that the validity of the **Do Not Resuscitate** order can no longer be assumed.

5. Multiple patients **WILL NOT** be carried in a single vehicle if one of the patients has a valid **Do Not Resuscitate** order during ambulance transport time.

6. If an ambulance crew is transferring a patient with a **Do Not Resuscitate** order into or out of Ontario, the order will be honoured by the ambulance crew if all requirements of this policy have been met. This would include cases where the **Do Not Resuscitate** order has originated outside of Ontario.

Guidelines

I. Pre-transport Guidelines

When advised by the Central Ambulance Communications Centre/Medical Air Transport Centre (CACC/MATC) or by the sending staff of a health care facility of the existence of a **Do Not Resuscitate** order, the crew will request that the **Do Not Resuscitate** order or a copy of such an order accompany the patient during the transfer. The Attending Physician can use the Ministry of Health, *DNR Order/Validity Form* as a **Do Not Resuscitate** order if he/she wishes to do so.

A. Prior to transport, the crew will:
1. Obtain the written **Do Not Resuscitate order**, or copy thereof, if provided.
2. (a) ensure that a Ministry of Health, *DNR Order/Validity Form* is completed in full and the appropriate signatures are obtained, or
   (b) where a *DNR Order/Validity Form* has not been completed by sending staff (as per Directives, paragraph 2) request the escort responsible for the patient and the DNR order to sign the Ambulance Call Report (ACR) indicating that a valid DNR order is in effect. (e.g. "DNR order in effect." J. Smith, RN);

3. Confirm that the patient being transferred is the patient to whom the valid **Do Not Resuscitate** order applies[2].
4. Determine from sending staff whether the patient has received or will receive sedative medication prior to transport[3].
5. Confirm transport priority.
6. Confirm with sending facility staff, subject to CACC/MATC approval, the location to which the patient is to be transported[4] should death occur during ambulance transport.
7. If an escort from a sending facility accompanies the patient, confirm the responsibility of the escort in regard to patient care and the **Do Not Resuscitate** order during ambulance transport time - confirm that:
    a) the escort is responsible for the patient and that the crew is to take patient care direction from the escort (exception - escort initiates CPR regardless of a valid DNR order (see Section II, Guidelines During Transport, paragraph 4) or,
    b) the escort does not have patient care responsibility and that the crew will act in accordance with this policy.
8. If a family member is to accompany the patient in the ambulance, ensure that the family member is fully advised of procedures that will be followed during transport and provide any other information that is pertinent to the transfer[5]. This should be done prior to departure.
    The family member should be made aware of:
    a) the status of the **Do Not Resuscitate** order during transport;
    b) procedures which the crew will carry out should the patient suffer a respiratory or cardio-respiratory arrest during transport;
    c) transport procedures to be followed by the ambulance crew should the patient suffer a respiratory or cardio-respiratory arrest during transport;
    d) alternate modes of transport other than riding with the patient in the ambulance.

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[2] The patient's identity can be confirmed by checking the patient's hospital bracelet, checking with the attending physician or physician's delegate, or checking with the patient.

[3] Ensuring that the patient is adequately sedated is particularly important if the patient is likely to expire during ambulance transport time. Sedation will allow the patient to experience a more peaceful and dignified death.

[4] a) return to the sending facility; or
b) continue on to the designated receiving facility; or
c) go to either the sending or the receiving facility, depending on which is the closer location; or
d) to an "other location" e.g. at the crew's discretion with CACC/MATC agreement; at the direction of CACC/MATC or as per local protocols; or
e) return to the sending facility or "other location" if the patient was being transferred home at the time of death.

[5] Treat the family with compassion, caring and sensitivity. Ambulance crews should not attempt to forcibly separate family members from a terminally ill patient, but should exercise judgement in determining which family members and how many may reasonably accompany the patient in the ambulance.

9. Document patient information on the ACR as listed below:
    a) document in the comments area of the ACR that "Patient has a valid **Do Not Resuscitate** order"; where a MOHLTC DNR Order/Validity Form has NOT been completed, document "EHS DNR Order/Validity Form not completed, escort responsible for DNR order; escort signed/refused to sign ACR" .
    b) preferred destination should the patient die enroute;
    c) any medications given to the patient just prior to transport;
    d) presence or absence of an escort and whether the escort is "responsible" or "not responsible" for the patient enroute;
    e) information provided to the family concerning transport procedures.
10. Should a patient suffer a respiratory or cardio-respiratory arrest during ambulance pick-up, the crew will:
    a) where sending facility staff are still present, take direction from the sending facility staff and provide assistance within the EMA's/Paramedic's scope of practice; or
    b) where sending facility staff are no longer present, e.g. crew is on the way to the ambulance, follow the Guidelines During Transport, (#2 page 8) until patient care responsibility can be transferred back to the sending facility staff or nearby emergency unit[6].

B. (i) If a completed written **Do Not Resuscitate** order or a copy has not been provided to the crew, and the Attending Physician has not utilized the Ministry of Health, *DNR Order/Validity Form* as a **Do Not Resuscitate** order,

OR

(ii) If a written **Do Not Resuscitate** order or copy is provided for the ambulance crew, but there is no Attending Physician or Physician's Delegate (includes an escort) to complete the Ministry of Health, *DNR Order/Validity Form* for validation purposes,

AND

(iii) an escort from the sending facility is not responsible for the patient or for honouring the DNR order enroute,

the crew will:

1. Confirm with sending facility staff that the crew will undertake a full attempt to resuscitate the patient should a respiratory or cardio-respiratory arrest occur during ambulance transport.
2. Confirm the identity of the patient being transferred.
3. Confirm transport priority.

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[6] Due to the varying capabilities of sending facilities the patient may be transferred to the sending patient care unit or to the Emergency Unit of the facility, whichever is closer. Ambulance service and CACC/MATC operators should establish local procedures with sending and receiving facilities for handling such situations.

4. If a family member is to accompany the patient in the ambulance, ensure that the family member is fully advised of procedures that will be followed during transport and provide any other information that is pertinent to the transfer. This should be done prior to departure. The family member should be made aware of:
   a) the procedures which the crew will carry out should the patient suffer a respiratory or cardio-respiratory arrest during transport;
   b) transport procedures to be followed by the ambulance crew should the patient suffer a respiratory or cardio-respiratory arrest during transport;
   c) alternate modes of transport other than riding with the patient in the ambulance.
5. Document required patient information on the Ambulance Call Report (ACR).

II. Guidelines During Transport

When transporting a patient who has a valid **Do Not Resuscitate** order, the crew will:

1. Provide patient care enroute:
   a) Maintain the patient's comfort and dignity to the extent possible.
   b) Provide basic life support care as required - airway positioning, patient positioning, suction, oxygen. Attempt to relieve dyspnea[7].
   c) If an escort is responsible for the patient enroute, assist the escort with patient care as required, and within the EMA's/Paramedic's scope of practice.
2. Should a patient suffer a respiratory arrest or cardio-respiratory arrest enroute, while under a valid **Do Not Resuscitate** order, the ambulance crew will carry out the following procedures (in conjunction and cooperation with an escort where applicable):
   a) Assess the carotid pulse; if present, re-assess the pulse every 10-15 seconds; re-assess for respirations and pulse for at least 5 minutes[8].
   b) Once it has been determined that death has occurred (respirations and pulse absent for at least 5 minutes from the time that respiratory or cardio-respiratory arrest was noted):
      - Treat the deceased with respect and dignity. If a family member is on-board, be compassionate and provide emotional assistance and support.
      - Transport the patient priority 5 to a receiving facility (as set out in the Pre-Transport Procedures).
      - Advise the CACC/MATC; request that they notify the receiving facility that the patient has a valid **Do Not Resuscitate** order, and that the patient has died enroute.
      - Document the time of death.
      - Transport the deceased to the predetermined receiving facility or as directed by the CACC/MATC[9].

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[7] Several measures may be employed to relieve dyspnea - talk to the patient to calm them, open a window, turn on the fan and/or administer nasal oxygen, humidified if possible.

[8] Very elderly (80 + years) nursing home patients and other chronically/terminally ill patients may have apnoeic spells lasting up to 2 minutes or longer.

[9] Do not transport the deceased to a funeral home, hospital morgue or the patient's/family's private residence.

3. Where Cardiopulmonary Resuscitation is requested by patient or accompanying person enroute despite a valid **Do Not Resuscitate** order, the crew will:
   a) document on the ACR that a "patient/other person requests CPR";
   b) in all cases, explain the implications of complying with this request; if an accompanying person is making the request, explain that the patient's wishes when capable take priority over those of another person, in the event of respiratory or cardio-respiratory arrest;
   c) document "explanation provided" ;
   d) have the patient or accompanying person sign the documentation;
   e) if no signatures are attainable document the verbal request for CPR and reasons for lack of signatures;
   f) determine whether or not the **Do Not Resuscitate** order should be honoured e.g. Does Directive 4 (b) apply?
   g) where applicable advise the CACC/MATC that the **Do Not Resuscitate** order will not be honoured;
   h) if the patient suffers a respiratory or cardio-respiratory arrest:
      - advise the CACC/MATC in the change of patient status;
      - if CPR is instituted, transport priority 4 to the closest facility capable of providing the necessary medical care or to a facility as directed by the CACC/MATC.
4. If the patient suffers a respiratory or cardio-respiratory arrest and an escort initiates CPR regardless of a valid **Do Not Resuscitate** order, the crew will attempt to honour the valid **Do Not Resuscitate** order and use their best judgement in attempting to reason with the escort. The crew will NOT be obliged to assist the escort with CPR, or to change transport priority or receiving destination (subject to Directive 4 (b) page 3 of this policy).

III. Post-transport Guidelines

Upon arrival at a receiving health facility:

1. The ambulance crew will, in all cases, provide receiving health care staff with:
   a) a verbal report which includes notification regarding the existence and status of a **Do Not Resuscitate** order. If the patient has died enroute the report will include:
      - the time of death, and where applicable, the time of pronouncement of death by a base hospital or other physician;
      - the circumstances surrounding the death;
   b) a copy of the **Do Not Resuscitate** order;
   c) a completed copy of the ACR after receiving staff have signed the form acknowledging acceptance of the patient and transfer of patient care responsibility, and after the crew have completed their required documentation and signed in the appropriate areas of the form;
   d) the "buff" copy of the completed Ministry of Health, *DNR Order/Validity form* where completed.

2. If the crew perceives that a prolonged delay is likely at the receiving facility the crew will:
   a) advise their CACC/MATC of the delay;
   b) prepare vehicle and equipment for an immediate return to service if required by their CACC/MATC;
   c) advise receiving facility staff that the vehicle and crew must return to service if and when directed by their CACC/MATC.
3. If the receiving health facility staff question the validity of the **Do Not Resuscitate** order, the ambulance crew will request that receiving facility staff contact sending facility staff to confirm the status of the **Do Not Resuscitate** order.
4. If the receiving health facility staff question the procedures for pronouncement of death for a patient with a valid **Do Not Resuscitate** order, the ambulance crew will request that the receiving facility staff contact the person responsible for pronouncing death.
5. Should a patient suffer a respiratory or cardio-respiratory arrest during ambulance drop-off, the crew will follow the Guidelines During Transport, (#2 Page 8) until patient care responsibility can be transferred to the receiving facility staff.

Appendix 1 - Glossary

For purposes of this policy:

1.
   - **Ambulance, Ambulance Crew**
   - **Ambulance Call Report (ACR)**
   - **Attending physician**
   - **Base hospital (BH),**
   - **Associate Base Hospital (ABH)**
   - **Base hospital physician (BHP)**
   - **Associate Base Hospital Physician (ABHP)**
   - **Central Ambulance Communications Centre (CACC)**
   - **Paramedic (EMA)**
   - **Medical Air Transport Centre (MATC)**
   - **Paramedic**

   have the same meaning as set out in the Ambulance Act, Regulation 501 under the Ambulance Act, or Ministry of Health, Emergency Health Services Branch, Policies, Procedures, Directives and Guidelines.
2. **Ambulance transport time -** is a time period which begins when transfer of patient care responsibility and/or the patient to an ambulance crew has been completed by sending facility staff, and ends when patient care responsibility and/or the patient is transferred to the receiving hospital/health care facility staff. This includes all ambulance transport time periods, including transfers between ambulance crews and any delays occurring enroute while the patient is in the care of an ambulance crew.

3. **Capable** - with respect to a treatment means mentally capable. A person is considered to be capable with respect to a treatment if:
   a) the person is able to understand the information that is relevant to making a decision concerning the treatment, and,
   b) the person is able to appreciate the reasonably foreseeable consequences of a decision or lack of decision regarding the treatment.
4. **Cardiopulmonary Resuscitation (CPR)** - is an immediate application of life-saving measures to an individual who has suffered sudden respiratory or cardio-respiratory arrest. These measures include basic cardiac life support involving chest compressions, and/or artificial ventilation e.g. mouth-to-mouth resuscitation, bagging, and where available, defibrillation, intubation and other procedures considered to be Advanced Cardiac Life Support procedures by the Heart and Stroke Foundation of Ontario.
5. **A valid Do Not Resuscitate order** - is a physician's written and dated order, signed by the physician, as a result of which CPR will not be provided if the order meets all of the requirements detailed in this policy, and the Ministry of Health, *DNR Order/ Validity Form* has been completed.
6. **Health care facility** - a facility including but not limited to: a hospital defined under the Public Hospitals Act, Private Hospitals Act and Mental Hospitals Act including psychiatric facilities; nursing homes under the Nursing Homes Act; approved homes under the Homes for Special Care Act (homes for care of persons requiring nursing, residential or sheltered care); managed in-home programs for the terminally ill (e.g. Hospital-in-the-Home, Home Care Programs, Palliative Care Programs); and other facilities where a physician or physician's delegate is available (e.g. outpost nursing stations, physician's offices, Community Health Centres (CHCs), Health Service Organizations (HSOs) etc.).
7. **Physician's Delegate** - a Registered Nurse, Registered Practical Nurse (formerly Registered Nursing Assistant) or other health care professional, who has been delegated this responsibility by the Attending Physician, and who is aware of the patient's condition.

   For purposes of this policy, a Physician's Delegate may provide an ambulance crew with a **Do Not Resuscitate** order and other relevant information regarding the patient's **Do Not Resuscitate** status, document such information and sign the Ministry of Health, *DNR Order/Validity Form* on behalf of the Attending Physician. A Physician's Delegate may also act as a patient escort during ambulance transport time.
8. **Sending Facility Escort** - a Registered Nurse, Registered Practical Nurse or other health care professional, approved by the Sending Facility as an Escort, who is aware of the patient's condition. The Sending Facility Escort may or may not be responsible for patient care and the DNR order during ambulance transport time. This information must be obtained and documented on the ACR prior to transport. Family members and other non-medical escorts are *excluded* from this definition, and the responsibilities that comprise the duties of a Sending Facility Escort.

9. **Transfer of patient care responsibility and/or the patient to an ambulance crew by a sending facility** - is considered to have been completed when all pertinent verbal and written information has been transferred to the ambulance crew by sending staff, the patient is secured on the ambulance stretcher, and the crew is on its way out of the sending facility.
10. **Transfer of patient care responsibility and/or the patient from an ambulance crew to a receiving facility** - is considered to have occurred when the patient is transferred from the ambulance stretcher to the care of the receiving facility staff (e.g. patient is transferred to the receiving facility's stretcher or bed). The ambulance crew is still responsible for conveying all pertinent verbal and written information to the receiving facility staff.
11. **Treatment** - any action or service that is provided for a therapeutic, preventive, palliative, diagnostic, cosmetic or other health-related purpose, and includes a course of treatment or plan of treatment.

Intravenous Line Maintenance Standard

Standard

1. At the discretion of the sending physician, a patient with an intravenous line in place may be transported without a nurse escort. This includes the transport of patients with intravenous saline or heparin locks.
2. A paramedic trained to monitor and maintain an intravenous line, may transport and be responsible for the intravenous line, when a patient has an intravenous line to keep the vein open (TKVO) or for fluid replacement.
3. The maximum total fluid rate allowed to be infused under this policy is 200 ml/hr. Thiamine, multivitamin preparations and potassium chloride (KCL) may be administered by the intravenous line. The maximum amount of potassium chloride allowed to be infused under this policy is 40 milliequivalents in a minimum of 1000 mls of solution.
4. A primary care paramedic will **not** be responsible for:
   a) An intravenous line that is being used for blood (or blood product) administration.
   b) An intravenous line that is being used to administer medication (including prepackaged medications, except as detailed in (3) above).
   c) Monitoring electronic or other pressurized intravenous fluid infusers, pumps or central venous lines.
   d) Initiating or re-starting intravenous line(s).
   e) Transport of neonate or pediatric patients with intravenous line(s).

Definition

"Patient" under this standard, refers to a stable patient, 12 years of age or older.

Procedure

Pre-transport

1. Ensure that any required equipment is available and functional; equipment or supplies not normally provided by the ambulance service will be obtained from the sending facility.
2. Confirm that the patient is stable.
3. Confirm physician's written intravenous (I.V.) order with sending health facility staff.
4. Determine I.V. solution, flow rate, catheter gauge and length and site.
5. Note condition of I.V. site prior to transport.

6. Confirm amount of fluid remaining in bag.
7. Determine amount of fluid required for complete transport time and obtain more fluid if applicable.
8. Document all pre-transport I.V. information on the Ambulance Call Report (ACR).

During Transport

1. Monitor and maintain I.V. at the prescribed rate.
2. Document on the ACR, all actions taken during transport.
3. Apply the following procedures as required:

To Prepare an I.V. Bag

1. Place I.V. fluid bag on a flat surface.
2. Remove outer protective bag (if present).
3. Remove protective cap or tear top from insertion port.

To Change an I.V. Bag

1. Verify the new solution for clarity, expiry date, type (same as current solution) and volume.
2. Document the time the new container is hung and the amount absorbed from the old container.
3. Clean hands with alcohol wipes or alcohol-based hand sanitizer if available.
4. Tightly close the clamp on the administration set.
5. Remove protective cap from insertion port of new container.
6. Remove spike from old container being careful to avoid contamination and insert spike into new container. Squeeze the drip chamber (if necessary) until it is half full.
7. Hang up container, and check/ensure drip chamber is half full.
8. Open clamp and adjust flow to the rate ordered.

To Manage a Dislodged or Interstitial I.V.

1. Shut off the flow of fluid by closing the roller clamp on I.V. tubing line.
2. Lift tape from the skin to expose the insertion site.
3. Apply a sterile 5 x 5 cm (approximate) dressing directly over the insertion site.
4. Quickly remove the catheter and tape from the skin.
5. Maintain direct pressure on the site until bleeding stops. When bleeding is controlled secure a small dressing on the site with tape.
6. Document the time, amount of fluid remaining in the bag, the amount of fluid absorbed by the patient and a description of the site.
7. Retain equipment for the receiving hospital.

To Manage a Loose I.V. Tubing Connection

1. Shut off the flow of fluid by closing the roller clamp on the I.V. tubing.
2. Remove securing tape at connection site.
3. Apply direct pressure to the catheter tip (if the catheter becomes disconnected from the I.V. tubing) to prevent bleeding from the catheter.
4. Clean ends of tubing with alcohol swab.
5. Re-connect and/or tighten I.V. tubing at connection site.
6. Re-tape connection site.
7. Regulate flow rate as ordered by sending facility staff.

To Manage a Flow Rate Problem

1. Check height of tubing drip chamber. Try to position the drip chamber approximately 1 metre above the injection site whenever possible; and/or
2. Check I.V. bag fluid level to ensure fluid remaining. Change the bag when there is approximately 150 mls. of solution remaining.
3. Wrap I.V. bag with BP cuff and slowly inflate cuff until desired drip rate is achieved.
4. Check for signs of infiltration.
5. Ensure that the roller clamp is open.
6. Check tubing for kinking or clot formation.
7. Check catheter position - position of patient.
8. Adjust tape and/or reposition arm board.

To Manage a Leaking Connection

1. Remove tape.
2. Reconnect components.
3. Retape.
4. Adjust flow rate if necessary.

Post-transport

1. Report to the receiving health facility staff (and document on the ACR):
    a) The type of solution infused.
    b) The infusion rate.
    c) The amount of fluid infused during transport.
    d) The amount of fluid remaining in the intravenous solution container at the completion of the call.
    e) Any problems encountered enroute and corrective actions taken.
    f) Any urinary output that occurred enroute.
2. If the intravenous became interstitial or dislodged enroute, provide receiving staff with the remainder of the intravenous fluid and the administration set, including the catheter.
3. Complete ACR documentation and provide patient documentation to the receiving facility staff.

Load and Go Patients Standard

"Load and go" **all** patients who meet one or more of the following criteria:

General Conditions

1. Seriously injured multiple trauma patients and patients with isolated major injuries;
2. Non-trauma patients found to have unstable respiratory, circulatory and/or neurologic status or in whom instability is imminent or highly likely on the basis of assessment findings.

Medical and Traumatic Conditions

1. Airway obstruction unrelieved by mechanical methods e.g. suctioning, positioning, obstructed airway clearance maneuvers, etc.
2. Vital signs absent - resuscitation initiated (unless other specific protocols apply).
3. Inadequate breathing due to:
    - large open/sucking chest wound;
    - large flail chest;
    - tension pneumothorax;
    - major blunt chest injury;
    - acute cardiorespiratory disorders e.g. asthma, pulmonary edema.
4. Shock - no palpable radial pulse; impending shock - lethal cause obvious or suspect e.g. anaphylaxis, ruptured abdominal aortic aneurysm, ruptured ectopic pregnancy; severe, uncontrolled hemorrhage (wound, rectal, oral, vaginal).
5. Head injury - with unilaterally dilated pupil, and/or patient unconscious or level of consciousness decreased or decreasing during assessment.
6. Unresponsive - unconscious, coma.
7. Decreased level of consciousness - serious underlying disorder suspect or cannot be ruled out and/or no definitive field treatment is available.
8. Generalized convulsive seizure (on-going).
9. Chest pain - suspect AMI or other serious disorders (see *Chest Pain Standard*).
10. Burns with signs of inhalation injury, i.e. respiratory distress obvious or likely to develop based on assessment findings.

11. Extensive burns (includes chemical burns), e.g. any 3rd degree (child), 10% or greater 3rd degree (adult); 25% or greater 2nd degree (adult) or 20% or greater 2nd degree (child); 2nd/3rd degree burns to the face, hands, feet or perineum; lesser burns at extremes of age or complicated by other medical disorders.
12. Tender, distended abdomen secondary to blunt/penetrating trauma.
13. Unstable pelvis secondary to trauma.
14. Bilateral fractured femurs.
15. Complete amputations of a limb, thumb or penis; eye avulsion; partial limb amputation; partial amputations of thumb or penis, depending on severity of injury.

Pregnancy-Related Conditions

1. Vaginal bleeding with shock obvious or impending.
2. Eclampsia, severe pre-eclampsia (obvious, suspect); patient not in labour, or in early labour.
3. Umbilical cord prolapse - patient not in labour.
4. If **the patient is in SECOND STAGE LABOUR**: Load and go, prepare for possible delivery enroute:
   i) limb presentation;
   ii) *umbilical cord prolapse* - **exception** - if delivery appears imminent (for indicators of imminent delivery, see **Note** at the end of this section);
   iii) *pre-eclampsia* (obvious, suspect). **exception** - if delivery appears imminent (for indicators of imminent delivery, see **Note** at the end of this section);
   iv) *primips:* presenting part not visible at any time (during or between contractions); no straining or urge to push with contractions; (contractions approximately 2 minutes apart); *primips:* presenting part visible only with "bearing down" contractions and transport time is short e.g. 10 minutes or less; (contractions usually <2 minutes apart);
   v) *multips:* contractions around 5 minutes apart; no urge to push; presenting part not visible at any time (during or between contractions);
   vi) if one or more **complications** exist, and delivery is not imminent (for indicators of imminent delivery, see **Note** at the end of this section):
      - profuse vaginal bleeding - patient hypotensive or in shock;
      - multiple births expected;
      - premature labour (<35 completed weeks of gestation).
   vii) If a decision is made to deliver at scene and delivery has not occurred within 10 minutes of initial assessment, consider initiating rapid transport. Make decisions on a case-by-case basis (see *Labour Standard* for further discussion).

Note: Indicators of imminent delivery:

- crowning, or,
- primips: presenting part visible during and between contractions; urge to push or bear down; restlessness; contractions <2 minutes apart, or,
- multips: contractions 5 minutes apart or less + any other signs of second stage labour (urge to push or bear down; heavy red show; presenting part or bulging membranes visible at the vaginal orifice during or between contractions).

Conditions Related to Environmental Mishaps

1. Arterial gas embolism (AGE) (see *Scuba Diving Injuries/Disorders Standard*);
2. Decompression sickness (DCS), with the exception of skin-only decompression sickness (see *Scuba Diving Injuries/Disorders Standard*);
3. Severe electrical injury (see *Electrical Injury Standard* for indicators of severity);
4. Severe hypothermia (see *Cold Injury - Frostbite, Hypothermia Standard*);
5. Venomous snake/insect bite - obvious/suspect and accompanied by one or more of the "load and go" conditions outlined in this standard, or if such conditions are likely to develop based on assessment findings (see *Allergic Reaction - Known or Suspect Standard* and *Snake Bites Standard*).

Manage all "Load and Go" patients as follows:

1. Perform appropriate primary survey interventions.
2. Transfer and secure the patient to a stretcher, long backboard or adjustable break away stretcher.
3. Load and secure the patient in the ambulance; transport return priority Code 4.
4. Perform further history, assessments and management enroute.
5. Notify, or have dispatch notify the receiving facility enroute.

Oxygen Therapy Standard

A. Administer high concentration oxygen to all patients presenting with one or more of the following critical findings and/or presenting problems (listed in alphabetical order).

Note: This list is not all inclusive; other conditions may require high concentration oxygen. Use judgement.

Critical Findings

Abnormal vital signs (see following list of critical findings); also pulse rate <50/min or >110/min in the setting of other critical findings or presenting problems listed in this standard.

- Altered mental status;
- Apnea;
- Cyanosis/atypical pallor/ashen colour - generalized, or affecting one or more extremities (possible vascular occlusion);
- Loss of consciousness, decreased level of consciousness;
- Respiratory distress;
- Shock or impending shock e.g. BP <90 systolic and HR >110/min (adult); pallor, cyanosis accompanied by anxiety/confusion/agitation.

Presenting Problems

- Abdominal/back pain accompanied by one or more critical findings;
- Allergic reaction accompanied by one or more critical findings, or obvious anaphylactic reaction;
- Chest pain - any cause (**Note:** oxygen may be discontinued or the concentration reduced if assessment indicates only **minor trauma** or rules out a serious disorder as the cause of chest pain and the patient is otherwise stable; use judgement);
- Electrocution;
- Inhalation of toxic gases, e.g. carbon monoxide, smoke;
- Major/multiple trauma;
- Near-drowning;
- Overdose accompanied by one or more critical findings or history suggestive of ingestion of substance(s) known or highly likely to compromise airway, breathing, circulation and/or level of consciousness;
- Vision - sudden complete or partial loss (consider vascular occlusion).

Pregnancy

- **All** ante- & post-partum hemorrhage;
- **All** blunt trauma to the truncal area involving acceleration/deceleration forces (obvious or suspect based on history, mechanism of injury) or other types of trauma accompanied by critical findings;
- "Normal" labour (at term) accompanied by one or more critical findings;
- Premature labour;
- Labour with multiple births expected;
- Limb presentation;
- Umbilical cord prolapse;
- Fetal distress - meconium passed through the vagina prior to delivery;
- Fetal heart rate (if assessed) sustained above 160/min or below 120/min;
- Abdominal pain (other than normal term labour);
- Pre-eclampsia, eclampsia (obvious/suspect).

Environment-Related Disorders

- Scuba diving related complaints/conditions;
- Venomous snake bite (obvious/suspect).

If in doubt regarding the patient's oxygenation status, administer high concentration oxygen.

High concentration oxygen should also be administered for brief periods (30 seconds) post-suctioning and pre- and post- other invasive airway procedures, in conjunction with airway reassessment.

B. Oxygen Therapy Standard for C.O.P.D.

1. **If the patient with C.O.P.D.:**
   - has a decreased level of consciousness, or
   - has an altered mental status, or
   - is in severe respiratory distress, and/or
   - has suffered major or multiple trauma.

   Administer high concentration oxygen. The patient may stop breathing. Be prepared to ventilate.

2. **If the patient with C.O.P.D.:**
   - is alert and anxious, and,
   - in mild/moderate distress ("my breathing is worse than usual, but it's been worse than this"), and,
   - can speak with no or minimal difficulty, and,
   - is not cyanosed or colour is the same or slightly more cyanosed than usual (according to family), or,
   - is a smoker and >50 years of age (assume COPD).

   Administer 24-28% oxygen by nasal cannula or with oxygen at 1-2 litres per minute above home oxygen levels.

   Watch for improvement or deterioration in respiratory effort, mental status and colour; re-assess the pulse every 5-10 minutes - has initial tachycardia resolved or the rate returned to more normal levels? Ask the patient if they feel any better (subjective improvement).

   - If the patient feels better, maintain oxygenation at that level.
   - If the patient's level of consciousness starts to decrease or the patient indicates they feel no better or their breathing feels worse, administer high concentration oxygen. **Be prepared to ventilate**. Alternatively, increase oxygen by increments of 2 litres per minute above starting level and observe for improvement or deterioration. **Be prepared to ventilate.**

3. **If in doubt regarding the severity or cause of the patient's respiratory distress:**
   - administer high concentration oxygen. **Be prepared to ventilate.**

Note: The majority of respiratory specialists indicate that chronic obstructive pulmonary disease patients, other than those with severe end stage disease, can be administered high concentration oxygen for up to 30 minutes without adverse effects such as apneic periods or respiratory arrest.

Paramedic Conduct Standard

1. Paramedic Relations

The paramedic will:

a) Respect and pay due regard to the privacy and dignity of their fellow employees, allied health personnel and physicians.

b) Attempt to establish and maintain good working relationships with business associates and the public.

2. Paramedic Conduct

A. The paramedic will:

a) Observe Standards, Policies, Procedures, Protocols and Medical Directives.

b) Discharge their duties with honesty, diligence, efficiency and integrity.

c) Respect patient's rights.

d) Conserve life, alleviate pain and suffering and promote health.

e) Demonstrate empathy and compassion for patients and their families.

f) Protect and maintain the patient's safety, dignity and privacy.

g) Recognize the importance of self-assessment and of continuing education and the willingness to teach others in their own field as well as other allied health care personnel.

B. Behaviour unacceptable to the practice of a paramedic includes but is not limited to:

a) Misrepresentation of their qualifications and credentials.

b) Falsification of medical records.

c) Sexual impropriety with a patient.

d) Refusal or neglecting to serve citizens requiring services which are part of the normal performance of their duties given their current certification status.

e) Theft of drugs.

f) Violation of the Criminal Code of Canada.

g) Threatening or using violent behaviour.

h) Being under the influence of or affected by illegal drugs, controlled substances or alcohol during working hours.

i) Any other conduct unbecoming of a practicing paramedic.

3. Discrimination and Harassment

Paramedics must maintain a work environment which is free from harassment in any form, and must correct situations which have resulted in harassment in the workplace or to patients.

The following behaviour will, therefore, not be tolerated:

a) Discrimination and harassment based on race, ancestry, place of origin, ethnic origin, citizenship, creed, gender, sexual orientation, age, marital status, or handicap.[1]

b) Sexual advances, unwanted or inappropriate actions, comments or other inappropriate behaviour.[2]

c) Use of racial, sexual or religious slurs or remarks, jokes or conduct.

4. Confidentiality

Strict confidentiality must be maintained.

Confidential information includes:

a) Identifying information about an individual (e.g. personal health information, such as a medical record or the name and address of a patient), whether in oral or recorded form (e.g. written, printed, or in electronic form).

b) Information obtained through one's position which is not available to the public in general.

If a paramedic is in doubt as to whether information is of a confidential nature, guidance should be sought from their supervisor.

5. Disclosure of Confidential Information

Personal health information shall NOT be disclosed to anyone EXCEPT where the disclosure is permitted under the *Personal Health Information Protection Act, 2004* (PHIPA). For **the purposes of illustration only, and without limiting lawful disclosures under PHIPA,** PHIPA permits the disclosure of personal health information about an individual:

a) where the individual to whom the information relates has consented to its disclosure;

b) for the purpose of contacting the individual's substitute decision-maker where the individual is unable to give consent personally;

c) to other health care providers, hospitals and long-term care facilities, for the purpose of their provision of health care to the individual, unless the individual to whom the information relates has indicated that he/she does not want the information disclosed for that purpose;

d) to the police for the purpose of complying with a warrant;

e) as permitted or required under another Act, such as the *Coroners Act* or the *Child and Family Services Act.*

PHIPA permits the disclosure of personal health information in a number of other circumstances, so it is necessary to refer to PHIPA or your contact for privacy issues if you are not sure whether personal health information can be disclosed in particular circumstances.

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[1] *Ontario Human Rights Code, 1981, S.O. 1981, c.53, sections 1 & 4(2)*

[2] *Ontario Human Rights Code, 1981, S.O. 1981, c.53, s.6(3)*

Patients with Vital Signs Absent (Transportation) Standard

1. All patients will be assumed to be viable and will be treated as living persons. Patients will be provided with the care and transportation required unless they are pronounced dead or are obviously dead as defined in this standard.
2. No person except a qualified medical practitioner has the authority to pronounce a person dead. This may be requested by paramedics acting upon the direction of a base hospital physician when local procedures on pronouncing death have been established.

Procedure

In instances of sudden or unexpected absence of a patient's vital signs, the paramedic is obliged to:

1. Assume life. A decision based upon subtle physical factors such as skin temperature, skin colour, etc. is inappropriate.
2. Initiate life support measures, i.e. SAED, CPR, in accordance with the *ALS Patient Care Standards* unless the provisions of *Policy 4.6 - Interfacility Do Not Resuscitate Orders* apply.
3. Initiate transport of the patient to a medical facility as quickly as possible.
4. Document the detailed findings of the history taking, patient assessment and any patient care efforts (including the results of such efforts) on the Ambulance Call Report (ACR). Report the information to the receiving facility medical personnel.
5. In cases of suspected foul play, every effort should be made to leave the scene undisturbed and to preserve as much evidence as possible for the police. This obligation is second only to ensuring that the appropriate assessment, treatment and transport of the patient occurs.

Criteria for Presuming Death

1. **Legal Death**

   Legal death exists only when a physician (including a base hospital physician acting through a paramedic) has pronounced death.

2. a) **Obvious Death - No Physician Present**

   Upon completion of a thorough physical assessment and history taking, the paramedic may "presume" death has occurred if gross signs of death are obvious, i.e. by reason of decapitation, transection, visible decomposition, putrefaction or otherwise.

b) Obvious Death - "Otherwise"

Upon completion of a thorough physical assessment and history taking, the paramedic **may presume** that death has occurred only in circumstances where the patient exhibits:

i) absence of vital signs, and

ii) "obvious" signs of death, i.e. grossly charred body; open head or torso wounds with gross outpouring of cranial or visceral contents; gross rigor mortis.

Presumption of death is based upon knowledge, skills and training in patient assessment and care. Should there be any doubt that death has occurred, every effort must be made to resuscitate the patient.

Notes:

1. Gross rigor mortis is defined as one or more of the following findings in a patient with absent vital signs:
   - limbs and/or body stiff;
   - coldness and/or posturing of limbs, body;
   - lividity (liven mortis);
   - complete or partial corneal opacification associated with any of the above.
2. **Severe hypothermia**

   a) Severe hypothermia should be assumed if the history of the incident and scene observations suggest severe hypothermia **and** the patient is cold and/or postured, stiff and unresponsive **and** pulse and respirations are slow or absent.

   This also includes severe hypothermia secondary to near-drowning (immersion/submersion) unless other signs of "obvious death" are present concurrently.

   Some drug overdoses and poisonings may result in a patient being VSA in association with hypothermia, e.g. barbiturates, alcohol, insulin, opiates, phenothiazines, sedative hypnotics, benzodiazepines.

   b) Check pulse and, if available, utilize a cardiac monitor, for 45 seconds. If the patient is pulseless/asystolic, initiate appropriate SAED protocols in accordance with the *ALS Patient Care Standards.*

   c) If pulse is palpable during the 45 second interval, initiate ventilation without chest compressions. Use humidified oxygen, warmed if possible, and transport as soon as possible.

   d) If transport time is prolonged (i.e. greater than 30 minutes) it may not be practicable to continue resuscitation on all severely hypothermic patients especially if the patient remains pulseless, apneic and the chest remains stiff and immobile despite repeated manual ventilatory efforts. Contact will be made with a base hospital physician, if available, to request termination of resuscitation efforts.

3. Victims of high voltage electric shock or lightning strike may appear dead, with fixed, dilated pupils and stiffening from muscle contractions. Unless other signs of rigor mortis or obvious death are present, initiate appropriate SAED protocols in accordance with the *ALS Patient Care Standards*.
4. In cases when death appears obvious in infants or children, or other situations where family members of the deceased are unable to deal with the situation, i.e. they are unable to accept that death has occurred, initiation of patient care and transport is recommended. Use compassion and judgement to balance the parent's or family's need for action with the requirements of this standard.
5. In cases where death appears obvious and CPR is being performed by citizens or other first responders, the paramedic may advise the citizens or first responders to discontinue CPR. The paramedic will follow the procedures described under ***Patient Presumed Dead.***

Patient Presumed Dead

When the criteria for presuming death has been met, each paramedic will ensure that the deceased is treated with respect and dignity; be conscious of the family and try to respect their wishes.

1. In Cases of Unexpected Death

a) If there is any evidence that this is an unexpected death, advise the ambulance communications officer and request that the police and coroner be notified.

b) Remain at the scene (unless directed otherwise by a ambulance communications officer) until either the police or the coroner arrive and accept responsibility for the deceased.

2. In Cases of Expected Death

a) If from the evidence collected regarding the deceased, the paramedic determines this to be an expected death (e.g. patient had terminal illness and death was expected), the paramedic will request that the family have the family or attending physician notified of the death and request the family or attending physician's presence at the scene to pronounce death.

   i) Should the family be unable to comply, the paramedic will notify dispatch to request the family or attending physician's presence.

   ii) If the family or attending physician cannot be contacted and there is a locally designated base hospital with a field pronouncement of death procedure, the base hospital physician should be contacted.

   iii) If the family or attending physician cannot be contacted and a base hospital physician is not available, the crew will notify dispatch to request the attendance of the coroner.

b) If there is an apparently responsible family member or friend willing to assume responsibility for the deceased until the family physician, attending physician or coroner arrives, the paramedic may depart the scene as soon as documentation is completed.

3. In All Cases of Death

a) Document the detailed findings of the history taking, patient assessment and any patient care efforts (including the results of such efforts) on the ACR.

b) In accordance with Regulation 257/00 as made under the *Ambulance Act*, *"legally"* or *"obviously dead"* persons must **not** be transported by ambulance, except from a public place where no body removal service is readily available. In such circumstances a coroner or a police officer acting on a coroner's order **may** authorize transportation of a deceased person by ambulance to the nearest hospital or morgue when an alternative ambulance is readily available to respond to emergency calls as determined by the local CACC/ACS.

Note: *"Public place"* means any place, building or public conveyance to which the public habitually resorts or to which the general public are admitted free or upon payment, but does not include a hospital, nursing home or any other health facility, or any home or other facility for children or for the aged, or any facility for persons with mental or physical handicaps, or any private residence or boarding house.

Where a body is in a location where it is visible to the public and when the ambulance communications officer gives approval and indicates that another ambulance is available, a paramedic may transport the body to the closest available hospital or morgue.

Physician's Orders Standard

This standard outlines the expectations of the MOHLTC regarding the conduct of paramedics when they receive patient care orders from a physician.

Definitions

Physician	A duly qualified medical practitioner who is licensed to practice medicine in Ontario.
Patient Care Orders	Any verbal or written direction to perform a BLS procedure. This does not include orders regarding transportation to a health facility.

Procedure

1. If a physician gives patient care orders to a paramedic and those orders are carried out by that paramedic, the physician giving the orders will be deemed to have assumed responsibility for patient care.
2. If the paramedic is unfamiliar with the person giving patient care orders, the paramedic should attempt to ascertain if the person is a "physician" as defined in this standard. If the paramedic is unable to satisfy themselves that the person is a physician, the paramedic should not carry out the patient care orders.
3. The paramedic must remain sensitive to the changing condition and needs of the patient. If the paramedic is unsure that the orders of a physician are appropriate for the patient, the paramedic should endeavour to advise the physician of their concerns and re-check the order. If the paramedic is unable to carry out an order or decides that carrying out the order would not be in the best interests of the patient, the paramedic should carefully document the incident, including the reasons why the order was not carried out.
4. The paramedic receiving patient care orders from a physician shall document the orders given, the time they are given, the name of the physician giving the orders and whether or not the orders were carried out by the paramedic.
5. Written patient care orders must be signed by a physician. Verbal orders must be direct to the paramedic and cannot be relayed by a third party (e.g. a nurse, an ambulance communications officer, another paramedic, bystanders, etc.).

Police Notification Standard

Paramedics will ensure that police are notified in any cases involving unusual or suspicious situations (e.g. sudden death, violence, foul play, child abuse, accidents involving emergency vehicles).

Procedure

Requesting Police Assistance

1. Paramedics requesting police assistance will:
    a) contact their dispatch centre via radio or telephone;
    b) state the nature of the request;
    c) indicate the urgency of response and request the estimated time of arrival;
    d) advise of possible hazards;
    e) indicate access routes (where applicable);
    f) provide police with an update of the situation when they arrive at the scene.
2. The following may be used to contact police in extenuating circumstances:
    a) 10-200 No immediate danger is evident to patient or paramedic;
    b) 10-2000 Immediate danger is evident to patient or paramedic;
    c) emergency button on FleetNet radios, where available.
3. The use of police escorts during transport is discouraged due to the prevalent danger it presents. When assistance is absolutely necessary, police may be requested for strategic intersection control.

Suspected Foul Play

In cases of suspected foul play, every effort should be made to leave the scene undisturbed and to preserve as much evidence as possible for the police. This obligation is second only to ensuring the appropriate assessment, treatment, and transport of the patient occurs.

The following points should be noted:

1. Once a body is moved it can never be put back in its original position.
2. Careful attention is required whenever something is moved.
3. Move as few things as possible, remembering where the item was and where it was moved to.
4. Do not make use of any non-EMS phones while at the scene.
5. Whenever possible use the shortest, most direct path to the patient and the same path when leaving the scene.
6. Do not touch the "obviously" dead, weapons or items of evidence regardless of how insignificant they may appear.

7. Do not discuss the situation with news media, spectators or witnesses, remembering the more you get involved beyond the normal duties as a paramedic, the more you will have to remember in a court of law/inquest.
8. If the person is not obviously dead and you are removing the patient to the hospital, it is important to note the position and condition of the person before they are taken away (if possible, mark in some way the position of the patient prior to removal).
9. In an attempt to preserve continuity of evidence, all linen used during the call should be carefully bagged and held for the investigating officer. The receiving hospital staff should also be cautioned regarding the suspected foul play, so that they may carefully preserve the patient's clothing, personal effects, hospital linen, etc., for the investigating officer.
10. It is important that the paramedic note the apparent mental condition of persons at the scene whether it be the suspect, victim or witness (e.g. did the person appear nervous, calm, upset or under the influence of alcohol or drugs).

Hanging

In cases of hanging, the following special precautions must be taken:

1. The natural instinct to immediately cut the person down should be resisted.
2. Unless death is "obvious" the patient should be freed immediately by grasping the lower limbs, raising them to take the weight off the rope, and removing the rope from around the patient's neck.
3. Careful observation should be made of the position of the rope around the patient's neck.
4. The rope should be cut only if it cannot be readily slipped off and in such a way that the knot will be preserved. The knot can be an important clue for the police and must be preserved for the investigating officer.
5. Ropes passed over branches or beams may provide clues for the investigating officer and should be left if at all possible or at most, lifted off not pulled off. Paramedics should note where and how the fixed end of the rope is attached.

Sexual Assault

In cases of sexual assault, the paramedic crew will be guided by their training in this type of situation:

1. Genitals should not be examined unless obvious bleeding or laceration requires the application of a dressing.
2. Advise the patient not to wash, douche, urinate or defecate until the physician has had opportunity to conduct an examination at the Emergency Department.
3. Other injuries (e.g. fractures, lacerations) are treated according to appropriate procedures.
4. Obtain as clear a history of the incident as possible using a calm professional manner with no display of personal curiosity.

5. Clothes, linen and dressings need to be preserved for continuity of evidence. Whenever possible, a police officer should accompany the patient and ensure the patient's clothing is packaged separately and with care upon removal. Whenever police have not accompanied a patient, the paramedic crew must take appropriate action to ensure the preservation of the clothing, linen, etc., for the investigating officer. The crew should ensure the receiving hospital staff are aware of the nature of the incident so they may take the necessary precautions.

Child in Need of Protection

Section 72 of the *Child and Family Services Act*, R.S.O. 1990, c. C.11, places a duty on each person to report to the Children's Aid Society any child who such person reasonably believes is in need of protection for the reasons described in that section. Paramedics will therefore report all such cases in accordance with the Act. Where for example, in responding to a call, a paramedic has reasonable grounds to suspect that a child has suffered or is likely to suffer abuse or harm (whether such abuse or harm is physical, sexual or emotional, or arises from someone's failure to act or a pattern of neglect, etc.), the paramedic will immediately and directly report their suspicion and the information on which it is based to the Children's Aid Society. The failure to report a reasonable suspicion in the circumstances set out in the *Child and Family Services Act* is an offence under that Act.

Call Completion

1. The paramedic crew will complete an incident report in all cases where foul play is suspected or proven. Particular attention will be paid to:
   a) Times of call received, arrival at scene, departure and arrival at hospital.
   b) A diagram of the scene showing the position of the patient, surroundings and any items of importance.
   c) Any obvious smells, peculiar or otherwise e.g. gas, perfume, smoke.
   d) Weather conditions.
   e) Exact location.
   f) Other significant details e.g. history of the incident, signs and symptoms of the patient, statements made by patient and witnesses.

Self-Administered Medications Standard for EMAs/Paramedics

Purpose

To provide direction to EMAs and paramedics on assisting with the administration of a patient's own prescribed medications, as EMAs are not authorized by Base Hospital Physicians to provide symptom relief medications, or in instances when symptom relief medications are not available to a paramedic.

Paramedics authorized to provide symptom relief must adhere to the *Advanced Life Support Patient Care Standards* when symptom relief medications are available.

All EMAs and paramedics need to be familiar with the self-administered medications covered by this standard so that they can safely administer them to patients when it is appropriate to do so.

Nitroglycerin for Chest Pain

Procedure

1. Medication - nitroglycerin spray, 0.4 mg per dose; 200 metered doses per cannister; **OR**, nitroglycerin tabs, 0.3 or 0.6 mg/tab.
2. Position the patient semi-sitting or sitting. Assess the patient, including vital signs. Attach to cardiac monitor if available. Administer 100% oxygen (if not already started).
3. Check the prescription label for the patient's name, name of the drug, drug dosage and expiry date. Confirm that the medication belongs to the patient, e.g. from the patient, family member, and/or the medication is found on the patient. Have your partner verify this information.
4. Assist the patient with self-administration of prescribed sublingual (SL) nitroglycerin tablets/ spray only if the following conditions are met:
    - history suggests angina, possible acute myocardial infarction or pain is similar to previous episodes of cardiac pain and/or the patient requests assistance with prescribed nitroglycerin;
    - time interval since last dose has been at least 5 minutes and has not exceeded 3 doses since the onset of pain;
    - systolic blood presure is ≥100 mmHg and heart rate is ≥60 bpm and ≤160 bpm;
    - patient is sitting or semi-sitting, alert and capable of understanding instructions;
    - no known allergy or hypersensitivity to nitroglycerin;
    - patient has not taken a prescription erectile dysfunction medication (e.g. Viagra, Levitra, Cialis, etc.) within the past 48 hours.
5. **DO NOT** shake the container; remove cap. Keep the canister vertical, with the nozzle head up and held as close to the patient's mouth as possible.
6. Depress (or have the patient depress) the valve once, using the finger. Repeat the dose every 5-10 minutes, up to three times if pain is not relieved or only partially relieved.
7. If using tablets, place (or have the patient place) the tablet under the tongue and keep it there until the tablet is dissolved. If the tablet is good (not out of date), the patient should feel a slight burning sensation as the tablet dissolves.
8. Assess vitals after each dose. Discontinue nitroglycerin if BP drops by ⅓ of the intial systolic BP or vital signs fall out of designated parameters listed above.
9. Maximum of 3 doses can be administered to patient including any doses the patient has self-administered.
10. Document on the ACR the assessment findings, dose(s), response(s), compliance and times(s).
11. Transport with cardiac monitoring if available and approved for use.

Salbutamol for Shortness of Breath

Procedure

1. Assess the patient; check ABCs.
2. Take vital signs. Start 100% oxygen by mask. Attach cardiac monitor if available.
3. Take history from patient or bystanders for:
    a) Asthma;
    b) COPD;
    c) Chronic bronchitis;
    d) Emphysema.
4. Inspect and auscultate the chest and note:
    a) Inspiratory wheezing;
    b) Expiratory wheezing;
    c) Cyanosis;
    d) Poor air entry;
    e) Intercostal and/or subcostal indrawing;
    f) Sternal retractions and/or supra/infraclavicular retractions.
5. If history and physical exam are suggestive of obstructive airway disease, assist the patient with self-administration of prescribed salbutamol.
6. Check the prescription label for the patient's name, name of the drug, drug dosage and expiry date. Confirm that the medication belongs to the patient, e.g. from the patient, family member, and/or the medication is found on the patient. Have your partner verify this information.
7. Remove mouthpiece cover and check inside and out to ensure cleanliness.
8. Shake the inhaler vigorously.
9. Hold the inhaler upright between the fingers and thumb.
10. Before using the inhaler for the first time, or if the inhaler has not been used for a week or more, release 1-2 puffs into the air to ensure it is working.

11. For the next step, there two alternatives:

    Instruct the patient to breathe out as far as is comfortable and then place the mouthpiece in the mouth between the patient's teeth and have them close their lips around it (but not to bite it). Just after starting to breathe in through the mouth, press down on the top of the inhaler to release the drug while instructing the patient to continue to breathe in steadily and deeply.

    OR

    Instruct the patient to breathe out as far as comfortable and then place the inhaler two finger widths directly in front of the patient's mouth. Have the patient begin a deep inward breath through the wide open mouth while at the same time pressing down on the top of the inhaler to release the drug.

12. While the patient is holding their breath, remove the inhaler from their mouth. Instruct the patient to continue holding their breath for as long as comfortable.
13. If the patient is to take further puffs, keep the inhaler upright. Wait approximately 30 seconds before repeating the prescribed dose. Administer 6 puffs initially. If the patient fails to improve, repeat 6 puffs up to 2 more times.
14. After use replace the mouthpiece cover.
15. Monitor vital signs every 5 minutes including cardiac monitoring, if available.
16. Occasionally, some patients feel a little shakey or have a headache after using salbutamol.
17. Report to the receiving health facility staff and document on the ACR:
    - assessment findings;
    - dose(s);
    - response(s);
    - compliance and times.

Glucose Gel for Diabetic Emergencies

Procedure

1. Take history and assess ABCs.
   a) Determine the patient's status on the Glasgow Coma Scale.
2. If the patient is a known diabetic on insulin or oral hypoglycemic medication and has an **acute** onset of any of the following:
   a) agitation;
   b) syncope;
   c) confusion;
   d) seizure;
   e) sweating;
   f) decreased level of consciousness.

   Administer high concentration oxygen. Immediately administer oral glucose gel.
3. a) The patient should be loaded into the ambulance or portable suction should be immediately on hand at the scene. Maintain ABCs and oxygen therapy.
   b) Advise the patient of what you are about to do.
   c) Position the patient semi-sitting, or if consciousness is decreased, in the left lateral or recovery position.
   d) Tear or cut off the tip of the Glucose Gel and if the patient's gag reflex is intact, squeeze the entire contents of the packet into the patient's mouth. Instruct the patient to swallow. If LOC is decreased and the gag reflex is/is likely to be absent, rub the gel over the patient's gums with gloved fingers and deposit small amounts in the buccal folds between the cheek and gum line; keep suction available and ready at all times. Use as required.
   Note: If the patient is actively seizing, paramedics should use caution when applying glucose gel to the gum area.
   e) If there is no improvement of the patient's condition within 10 minutes, repeat the dose.
   f) Document assessment, dose(s), response(s) (pre- and 10 minutes post - GCS), compliance and time(s). Advise the receiving hospital staff of glucose gel administration and provide any remaining gel to receiving staff.

Epinephrine for Anaphylaxis

Administration Guidlelines

Patient has confirmed or suspected history of exposure to a probable allergen **AND** demonstrates signs and symptoms of a severe, life-threatening anaphylactic reaction, including:

- wheezing
- stridor
- generalized edema
- systolic B/P <90

Epinephrine Auto-Injectors

Administration Guidelines

Epinephrine auto-injectors are a disposable drug delivery system with a spring activated concealed needle.

The epinephrine auto-injector (with a **yellow label**) contains 2 ml epinephrine 1:1000 and is designed to deliver a single dose of epinephrine 0.3 mg in adults.

The epinephrine auto-injector (with a **white label**) contains 2 ml epinephrine 1:2000 and is designed to deliver a single dose of epinephrine 0.15 mg in children.

Epinephrine auto-injectors are stable at room temperature until the marked expiration date. They should not be refrigerated or exposed to extreme heat or direct light. The solution should be clear and colourless as viewed through the viewing window of the unit.

Method of Administration

1. Check the epinephrine auto-injector prescription label for the patient's name, drug dosage and expiry date. Confirm that the epinephrine auto-injector belongs to the patient, e.g. from the patient, from a family member, or the epinephrine auto-injector is found on the patient. Have your partner verify this information.
2. Activate the epinephrine auto-injector by removing the grey safety cap. **Never put fingers over the black tip when removing the safety cap, or after the safety cap has been removed.** If the solution is accidently injected into the hands or feet of the patient or self, seek immediate assessment at the closest hospital emergency unit.

3. Hold the epinephrine auto-injector with the black tip against the outer, fleshy aspect of the thigh, and apply moderate pressure to release the spring activated plunger. This pushes the concealed needle into the thigh muscle and expels the dose of epinephrine. Clothing should be removed from the thigh first, but if removal is likely to result in a delay of more than a few seconds, apply the injector over the clothing. The epinephrine auto-injector will work through clothing.
4. Hold the unit in place for several seconds after the unit activates, then discard the unit using appropriate sharps disposal procedures.
5. Massage the area post-injection to reduce local vasoconstriction and enhance absorption of the medication.
6. Document the time of the procedure, the name of the drug and the patient's response.

Note: The effects of the drug should be evident within seconds, with increased heart rate. Within 2-3 minutes, blood pressure should increase and respiratory distress decrease. Effects should last up to 20 minutes.

7. Initiate rapid patient transport after the injection has been given. Take vital signs every 5 minutes. Monitor and manage ABCs as required; repeat Glasgow Coma Score every 5-10 minutes; monitor cardiac rhythm (where monitoring is available).
8. If the patient is carrying 2 auto-injectors and there is no improvement in their condition within 10 minutes of the first injection, follow the steps previously outlined and administer a second dose.

Note: Before injecting; consider checking the colour of the solution through the unit's viewing window. If it appears brown, the solution has been damaged and is likely to be ineffective or marginally effective. Use the solution anyway if other treatments or epinephrine auto-injector units are unavailable.

Section 2

Medical Patient Categories

Introduction

Specific standards of care have been developed not on the basis of diagnosis, but on the basis of:

- chief complaint as stated by the patient/bystanders;
- presenting problem as indicated by the patient/bystanders;
- immediately obvious primary survey critical findings, e.g. respiratory arrest.

For all medical patient categories discussed in this section, refer to the *Medical Format, Short Form of General Standard of Care* beginning on page 2-4.

Each patient category in this section will include:

- key standard statements in short form, drawn from the *General Standard of Care*;
- standards which are specific to the condition under discussion;
- guidelines where considered appropriate (denoted by a ruled box titled as "Guideline(s)");

Key Code for Short Forms and Abbreviations

Abdomen = Inspect for distension, scars, pulsations, pulsatile masses; Palpate for tenderness, rigidity, guarding, masses (pulsatile and non-pulsatile).

AEIOU TIPS = **A**lcohol, **E**pilepsy, **I**nsulin, **O**verdose, **U**remia (and other metabolic causes), **T**rauma, **I**nfection, **P**sychiatric

Chest = Inspect for shape, symmetry of movement, indrawing (supraclavicular, intercostal, subcostal); Palpate for tenderness, bony deformity, crepitus; Auscultate for decreased air entry, wheezes, crackles;

Monitor = Observe, and does not imply cardiac monitoring unless specified within a standard. For other standard abbreviations, see *Abbreviations Standard.*

PQRST = **P**rovokes, **Q**uality, **R**egion/**R**adiation, **S**everity, **T**ime

Medical Patient Assessment (Overview)

Scene Survey/Personal and Patient Protection and Safety

- Environment
- Mechanism of Illness
- Casualties
- Additional Resources Required
- Personal Protective Equipment (PPE)

Patient Communication

- Identify/Introduce Self
- Obtain Patient Consent
- Obtain Event History

Primary Survey

- General Appearance of Patient
- Level of Consciousness (AVPU)
- C-Spine Considerations
    - Advise patient to remain still.
    - What Happened?
    - Chief Complaint?
    - Associated Complaints?
- Airway – assess patency
- Breathing (Chest Assessment) – Look/Listen/Feel
- Circulation – Pulse/Gross Bleed/Skin

Perform critical interventions to establish, improve and/or maintain ABCs.

Transport Decision

- Determine the need for rapid transport ("Load & Go")
- Determine CTAS Level

History

- Symptoms
- Allergies
- Medications
- Past Medical History
- Last Meal
- Event History

Vital Signs

- Pulse
- Respirations
- Blood Pressure
- Pupils
- Skin
- Glasgow Coma Score (see specific standards)
- Pulse Oximetry (if available)

Secondary Survey

- Head and Face
- Neck
- Chest/Cardiovascular
- Abdomen/Pelvis
- Back/Posterior
- Skin/Extremities
- Neurologic Exam

Note: Secondary survey is based on patient condition and specific standards.

Transport Decision (if not already enroute)

Medical Format, Short Form of General Standard of Care

Assessments

1. On all scene calls, assume the existence of, or potential for, serious or life-/limb-/function-threatening conditions until assessment indicates otherwise.
2. Perform general aspects of patient care as outlined in the *General Standard of Care*:
   - securing the environment and other personal and patient safety and protection measures (as per *Section A - General Standard of Care*);
   - introduction; other patient communication principles (as per *Section B - General Standard of Care*);
   - patient refusal of treatment/transport where applicable (as per *Section I - General Standard of Care*).
3. Conduct a scene survey. Elicit/determine/confirm the chief complaint or presenting problem.
4. Perform the primary survey and any interventions required to restore/improve airway patency, breathing and circulation. Specifically, as required:
   - **restore airway patency, breathing:** position the airway/patient, suction; manually clear foreign material; insert an airway; perform obstructed airway maneuvers; provide IPPV if the patient is in respiratory arrest;
   - **initiate cardiopulmonary resuscitation and SAED protocols;**
   - **manage respiratory distress:** administer high concentration oxygen; position the patient sitting/semi-sitting, assist ventilation if rate/quality of respirations is inadequate;
   - **control external hemorrhage:** with direct pressure;
   - **manage shock:** administer high concentration oxygen; blanket the patient to maintain warmth; **exceptions:** heat illness - no warming, no blanketing; septic shock with high fever - no blanketing.
5. Initiate cardiac monitoring (as per *Section F - General Standard of Care*).
6. Rapidly reassess the patient after each critical intervention or series of interventions. Immediately perform further or repeat interventions as required based on the patient's response. Ensure that equipment and technique is appropriate.
7. Make a transport decision - if a "load and go" problem is identified, blanket the patient; "load and go"; perform further assessments and management enroute. If the patient is stable, remain at scene and continue assessment and management if circumstances permit, or, transport and continue assessment enroute.
8. Elicit history of illness or incident **concurrent with or following** the primary survey.
9. Perform secondary survey physical assessments, including vital signs. Make further scene observations. Collect medications and other identification for transport with the patient.

10. If the patient's condition worsens during the secondary survey, repeat the primary survey and manage critical findings.
11. Reconsider transport decision based on additional findings/history.
12. Formulate a working assessment if not already done.
13. Determine the CTAS level of the patient.

Management

1. Initiate appropriate management interventions for primary survey critical findings (as detailed under *Assessments, point 4*).
2. Administer high concentration oxygen if indications exist other than primary survey critical findings as per the *Oxygen Therapy Standard.*
3. Initiate appropriate management of **other life-/limb-/function-threatening conditions including symptom relief, when appropriate -** at scene or enroute.
4. In the stable (or stabilized) patient, initiate appropriate management of **non-life-/limb-/function-threatening conditions.**
5. Continually monitor (observe) the patient. Re-evaluate as necessary. If deterioration is noted in the patient's airway patency, breathing, circulatory status and/or level of consciousness, repeat the primary survey and initiate immediate management of identified problems; re-check equipment and techniques; repeat vital signs every 5-10 minutes for all CTAS 1 and 2 patients unless prohibited by very short transport times and/or the severity of the patient's condition. For other patients, vitals are to be monitored as appropriate for the patient's condition.

Transport

1. Secure the patient and transport to the ambulance. Secure the patient, stretcher and equipment inside the ambulance. Position the patient as dictated by condition and/or comfort (see *Transport Position Guidelines* in *General Standard of Care*).
2. Transport the patient to a receiving facility as directed by CACC/ACS.

3. Enroute:
    - Ensure the patient is attended to at all times.
    - Complete the history and/or secondary survey if not yet completed, including vital signs, unless precluded by short transport time and/or the patient's condition.
    - Initiate/maintain appropriate management interventions.
    - Give the patient **nothing** by mouth (NPO) **unless** otherwise stated in specific standards.
    - Provide comfort and reassurance; ensure privacy as much as possible; maintain a comfortable temperature for the patient in the patient compartment.
    - Continually monitor the patient's airway, breathing, circulation, and level of consciousness; repeat vital signs at intervals of 5-10 minutes for all CTAS 1 and 2 patients unless prohibited by very short transport time and/or the severity of the patient's condition. For other patients, vitals are to be monitored as appropriate to the patient's condition.
    - Monitor and prepare for development of problems expected on the basis of working assessment; have necessary equipment/supplies readily accessible, and where applicable, set up to deal with expected problems.
    - Provide a radio report to dispatch and/or the receiving facility (see *Section K - General Standard of Care*).
    - Change destination to the closest or most appropriate hospital emergency unit if the patient's condition deteriorates enroute such that survival to the directed receiving facility is questionable. Notify dispatch of any change in destination.

Reporting and Documentation

1. Complete the transfer of patient care responsibility and ACR documentation (see *Sections M and N - General Standard of Care*).

2. If minimum required assessments and/or management interventions are not performed, document specific reasons or ensure that routine documentation clearly reflects the reasons for omissions, e.g. patient found in parking lot, no history, no identification available.

Abdominal Pain, Non-traumatic

Assessments

1. Assume potential life threats and generally a high probability of shock, i.e. conditions associated with intra-abdominal hemorrhage, perforation and/or obstruction:
    - Ectopic pregnancy;
    - Leaking/ruptured abdominal aortic aneurysm;
    - Perforated/obstructed hollow organ +/- peritonitis;
    - Acute pancreatitis;
    - Acute myocardial infarction, angina - epigastric pain/discomfort/indigestion may be the chief complaint;
    - Other: non-abdominal disorders may present with abdominal pain, e.g. diabetic ketoacidosis, pulmonary embolism or pneumonia (the latter two usually associated with right upper quadrant or left upper quadrant abdominal pain). These patients will generally present with other symptoms and signs, but abdominal pain may be the chief complaint.
2. Perform the primary survey, elicit history (PQRST), make a transport decision.
3. Perform minimum secondary survey physical assessments:
    - **Abdomen**: inspect; palpate; if a pulsatile mass is discovered, discontinue further palpation.
    - **Vital signs.**

Guidelines

Perform other secondary survey assessments:

- **Femoral Pulses:** palpate for weakness/absence on one or both sides if abdominal aneurysm is suspect;
- **Chest**: inspect, auscultate if cardio-respiratory disease is suspect;
- **Note melena** (if obvious).

4. Make a second transport decision if still at scene.

Management

1. If assessment indicates a serious disorder (as detailed under *Assessments point 1*) or if other indications exist, administer high concentration oxygen and initiate rapid transport.
2. Manage shock and other identified problems as per general and specific standards of care.
3. Administer appropriate symptom relief medication to the patient in accordance with *ALS Patient Care Standards* if:
    - pain pattern is similar to the patient's typical cardiac pain;
    - history is suggestive of acute myocardial infarction or angina;
    - no contraindications exist.
4. Give the patient nothing by mouth (keep NPO) - **exception**: other symptom relief medications if indicated.
5. Transport in a position of comfort unless prohibited by shock.
6. **Enroute -** Monitor, re-evaluate and manage as required. Prepare for expected problems:
    - emesis;
    - external hemorrhage (rectal, oral, or vaginal as applicable to working assessment);
    - shock, cardiac arrest (if suspect acute myocardial infarction, internal hemorrhage).

Airway Obstruction – General Standard

I. Complete Airway Obstruction

1. Elicit history concurrent with assessment and management.
2. Perform management interventions for complete airway obstruction secondary to:

A. Known Foreign Body - Choking

Perform assessments and obstructed airway clearance maneuvers as per current *Heart and Stroke Foundation of Ontario Guidelines* and *ALS Patient Care Standards*.

B. Trauma

- Protect the C-spine if injury is obvious, suspect, or cannot be ruled out.
- Use a modified jaw thrust or chin lift (no head tilt) to open the airway.
- Attempt ventilation in conjunction with high concentration oxygen; repeat opening maneuvers if airway remains obstructed.
- Attempt ventilation again; if airway remains obstructed, attempt to clear the airway using as many of the following basic mechanical maneuvers as required:
    - re-position the airway, re-position the patient;
    - manually clear foreign bodies, vomitus, other secretions;
    - oropharyngeal/nasopharyngeal suction;
    - insert an oropharyngeal or nasopharyngeal airway;
    - *HSFO Obstructed Airway Clearance Maneuvers* if other maneuvers fail to clear the airway and/or a foreign body is obvious/suspect based on history, scene observations and/or assessment findings;
- And additional maneuvers specific to the trauma patient:
    - if there appears to be loss of tongue support, attempt to manually draw the tongue and mandible forward;
    - helmet removal, e.g. if access to the airway is impeded or limited by the helmet; if unable to adequately perform other maneuvers to clear the airway.

C. Other

No history of choking (foreign body) or history of choking unavailable, unclear; trauma ruled out; other causes probable based on history, scene observations and/or physical assessment, e.g. smoke inhalation, allergic reaction, epiglottitis, foreign body aspiration (especially in children and the elderly).

Perform interventions as outlined in *2.B., bullet points 2, 3 and 4*, to restore airway patency. Head tilt may also be used in combination with other methods to open the airway only when trauma has been ruled out.

3. Initiate rapid transport if complete airway obstruction is unrelieved within minutes of starting active management, e.g. within 4 minutes or less = 2 complete cycles of HSFO maneuvers for the choking victim or, for trauma and other causes = 2 attempts to open the airway and ventilate, with suction and/or other mechanical maneuvers after each attempt. **Exception to initiating rapid transport: paramedic at scene authorized to perform direct laryngoscopy and removal of foreign body.**

4. Continue clearance efforts until:
   - airway patency is restored, **or,**
   - the patient becomes VSA and SAED protocols are initiated, **or,**
   - care is transferred to a paramedic authorized to perform direct laryngoscopy and removal of foreign body, or to receiving medical/nursing staff , **or,**
   - a radio or phone patch is established with a receiving physician, base hospital physician or other attending physician who issues a direct verbal order to the paramedic to discontinue efforts and/or gives further orders and the paramedic complies, **or,**
   - the paramedic becomes exhausted and has already switched resuscitation duties with their partner; in this instance, attempt a radio/phone patch with a physician prior to discontinuing efforts.

5. If **complete airway obstruction is relieved** and airway patency is restored:
   - assess for presence/adequacy of respirations, pulse;
   - administer/continue high concentration oxygen;
   - perform/repeat mechanical maneuvers (as per *2.B., bullet point 4*) as required to ensure continued airway patency;
   - document time (or approximate) when airway obstruction was relieved;
   - ventilate the patient if apnea persists, or if breathing appears inadequate, as evidenced by signs of hypoxia (e.g. decreased LOC, cyanosis);
   - if still at scene, and the patient remains "load and go" after airway obstruction is relieved, initiate rapid transport;
   - if the patient's condition stabilizes, perform a head-to-toe secondary survey; manage identified problems as per specific *Standards of Care*.

II. Partial Airway Obstruction

1. Elicit history.
2. Perform management interventions.
   If **the patient is moving air well:** i.e. is alert and capable of speaking without difficulty:
   a) Encourage the patient to maintain spontaneous respiratory and clearance efforts, without interfering.
   b) Administer high concentration oxygen **- exception:** children in whom epiglottitis is suspect **and** who are moving air well. Do not apply an oxygen mask or nasal cannula directly to the child's face. (See *Pediatric General Assessment and Management Standard* for further discussion of oxygen administration in the child.)
   c) Transport the patient sitting, semi-sitting, or in the patient's preferred position, i.e. the position which most facilitates the patient's respiratory efforts.
3. If the **patient is moving air poorly**: i.e. is cyanosed, level of consciousness is decreased and the patient is unable to speak and/or cough is weak and ineffectual with/without audible stridor, manage as directed for **complete airway obstruction**.

III. Complete/Partial Airway Obstruction – Known Bee Sting or Similar Insect Sting; Other Allergic Reaction

1. Concurrent with applicable management interventions outlined under **I** and **II:**
   - Follow *Allergic Reaction - Known or Suspect Standard.*

Alcohol Ingestion/Withdrawal

- For an unconscious patient or one whose level of consciousness is markedly decreased - follow the *Coma (Unconscious) Standard.*
- For a conscious patient - follow the procedures outlined in this standard.

Personal & Patient Safety and Communication

1. Seek assistance from other paramedics or allied emergency services personnel (including police) if the patient is violent or agitated.
2. Attempt to calm an agitated or aggressive patient. Be courteous and professional.
3. If the patient refuses treatment/transport, follow procedures as outlined in the *General Standard of Care, Section I.*

Assessments

1. Assume concurrent serious illness/injury. Assume concurrent substance abuse. Consider in particular:
   a) **Hypoglycemia** (frequently mimics alcohol intoxication and may be precipitated/ worsened by alcohol intake).
   b) **Alcohol (and drug) withdrawal** in heavy drinkers who suddenly reduce or cease intake. Symptoms usually appear within 6-24 hours:
      - anxiety, irritability, insomnia;
      - profuse sweating, fever;
      - tachycardia, hypertension;
      - tremors, withdrawal seizures;
      - delirium; hallucinations (visual, auditory).

   c) **Serious underlying disorders,** e.g. head injury in patients with altered behaviour or decreased level of consciousness that is out of proportion to the quantity of alcohol ingested.
2. Conduct a scene survey. Perform the primary survey, including trauma assessments if trauma is obvious, suspect, or cannot be ruled out. Elicit history. Make a transport decision.

3. Conduct a **head-to-toe secondary survey** whenever possible, including trauma assessments if indicated or history is unavailable/inconclusive. **If the patient is uncooperative,** attempt to obtain at minimum:
   - **Baseline pupillary size/equality/reactivity;**
   - **Baseline Glasgow Coma Score;**
   - **Vital signs.**

   Make a second transport decision if still at scene.

   Make further scene observations. Collect and transport medications, identification, other containers if ingestion of an alcohol-substitute is obvious or suspect, e.g. methanol, ethylene glycol (anti-freeze).

Management

1 If indicated/deemed necessary:
   - administer high concentration oxygen;
   - restrain the patient;
   - initiate rapid transport.
2. Manage primary survey problems, concurrent injuries, and other identified problems as per specific *Standards of Care.*
3. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
   - problems related to concurrent illness/injury;
   - emesis;
   - seizures, e.g. if withdrawal, head injury and/or drug ingestion is obvious/suspect;
   - agitation, violent behaviour;
   - decreasing level of consciousness;
   - airway compromise (complete, partial obstruction).

Allergic Reaction – Known or Suspect

Personal and Patient Safety and Protection

If stinging insects are swarming a victim, paramedics should remain in their vehicles with doors and windows closed in order to assess the situation. Request the fire department as quickly as possible to implement standard barrier procedures.

Assessments

1. Assume an anaphylactic reaction has occurred or is impending.

   Guidelines

   Keep in mind the most common allergens:

   - penicillin and other antibiotics in the penicillin family;
   - venom of bees, wasps, hornets;
   - seafood - shrimp, crab, lobster, other shellfish;
   - nuts, strawberries, melons;
   - sulphites (food and wine preservatives - especially in restaurant salad bars and buffets).

2. Perform the primary survey. Make a transport decision.

   Assume anaphylaxis if one or more of the following findings is present on physical assessment:

   - **facial or generalized swelling/flushing and/or hives;**
   - **wheezing, stridor, hoarse voice;**
   - **tachycardia, hypotension/shock.**

   Elicit history. **Assume anaphylaxis** if history indicates the presence of one or more of the following (in association with the above physical findings):

   - **difficulty swallowing; swelling/tightness in the throat;**
   - **difficulty breathing, feeling of suffocation;**
   - **generalized itching;**
   - **headache, palpitations, dizziness, nausea, vomiting, abdominal cramping;**
   - **fearfulness, anxiety, agitation, confusion, feeling of doom.**

3. Perform minimum secondary survey physical assessments:
    - **Head, face, neck:** inspect for swelling, hives/rash;
    - **Chest:** inspect, auscultate;
    - **Skin:** inspect for generalized swelling, flushing, hives; assess bite/sting site where applicable;
    - **Baseline Glasgow Coma Score;**
    - **Vital signs.**

    Make a second transport decision if still at scene.

Management

1. **If the patient has symptoms/signs of anaphylaxis:**
    - Attempt to calm and reassure an agitated/anxious patient. Advise the patient to remain still and keep movement to a minimum.
    - Administer high concentration oxygen. If anaphylaxis is obvious or impending, perform as required: establish a patent airway, assist ventilation, manage shock. Explain actions to the patient.
    - Administer appropriate symptom relief medication in accordance with current *ALS Patient Care Standards.*
    - Initiate rapid transport.
    - If the patient has been stung on an extremity, perform the following maneuvers, optimally at scene (or enroute if the patient is in extremis):
        - Position the extremity below or at heart level.
        - Attempt to scrape out a visible stinger using the edge of a flat object.
        - Apply a cold pack to the sting site.
2. Enroute: continuously monitor ABCs and level of consciousness if anaphylaxis is obvious or the potential for occurrence is great; re-evaluate and manage as required. Repeat vital signs at 5 minute intervals if anaphylaxis is evident. Prepare for expected problems:
    - emesis;
    - shock, respiratory/cardic distress, respiratory/cardic arrest if anaphylaxis is suspect or obvious.

Guideline

If cardiac monitoring capabilities are available, monitor the patient enroute.

Back Pain – No History of Trauma

If the onset of back pain is clearly related to injury, i.e. the ambulance was called for an injury resulting in back pain, follow the *Neck/Back Injury Standard.* Otherwise, follow the procedures outlined in this standard.

Assessments

1. Assume serious or life/limb/function-threatening conditions:
   - **Abdominal/thoracic aortic aneurysm:** leak, rupture, dissection;
   - **Intra-abdominal disease:** e.g. pancreatitis; peptic ulcer;
   - **Acute spinal nerve root compression:** (low back/buttock and posterior leg pain with/without loss or decrease in sensory/motor function in the leg(s) - usually due to herniated disc);
   - **Possible occult injury:** e.g. femoral neck fracture in an elderly patient (pelvic, hip, low back or knee pain); pathologic fracture (rib, vertebrae) from metastatic cancer or steroid use.
2. Perform the primary survey. Elicit history - attempt to determine if pain is new or recurrent, and/or different/worse than prior episodes. Attempt to rule out injury. Make a transport decision.
3. Perform minimum secondary survey physical assessments:
   - **Vital signs.**

   Make a second transport decision if still at scene.

   Guidelines

   Perform other secondary survey assessments:

Pain Site:	inspect, palpate only if easily accessible and the patient is cooperative; discontinue attempts if there is increased pain and/or syncope on attempted movement;
Chest:	auscultate if a cardiovascular or respiratory disorder is suspect;
Abdomen:	inspect, palpate if an intra-abdominal disorder is suspect;
Extremities:	briefly assess sensation using light touch; elicit reflexes; briefly assess motor function e.g. hand grips, active arm/leg movement; if nerve root compression or occult injury is suspect, or, pain is severe or exacerbated with movement, discontinue these assessments;
Distal Pulses:	palpate, including femoral pulses if a vascular disorder is suspect.

Management

1. Manage primary survey critical findings, other identified problems, injuries, as per general and specific standards of care. If indicated: administer high concentration oxygen; initiate rapid transport.
2. If no contraindications exist e.g. shock, respiratory distress, occult injury (suspect): position the patient to maximize pain relief (usually supine with knees flexed if pain is due to a musculo-skeletal disorder).
3. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
    - emesis, if pain is severe;
    - shock, if obvious/suspect internal hemorrhage.

Cardiac Arrest – Adults

Assessment and Management

1. Bring all required equipment to the scene:
    - stretcher;
    - First Response Kit(s);
    - portable suction;
    - semi-automatic defibrillator (SAED)/cardiac monitor;
    - other equipment deemed necessary on the basis of call information.
2. If assessment indicates "obvious" death as per *Patients with Vital Signs Absent (Transportation) Standard,* follow procedures as outlined in the standard.

Note: If cardiac arrest occurs during patient transport, and a valid DNR exists, follow the procedures outlined in the *DNR Standard.*

3. If the patient does not meet obvious death criteria:
    - position the patient on a firm surface; use the CPR board if required;
    - immediately initiate SAED protocols;
    - initiate cardiopulmonary resuscitation (CPR) as per current *HSFO Guidelines*;
    - use an oropharyngeal airway of appropriate size. Alternatively, use a nasophyrangeal airway if an appropriate size is available;
    - ventilate using an appropriate ventilating device/technique; be prepared for emesis.
4. Elicit history concurrent with patient assessment and resuscitation. If cardiac arrest is due to a treatable cause, initiate immediate management, e.g. epinephrine for anaphylaxis.
5. Unless a paramedic authorized to perform skills beyond SAED is at scene, or, dispatch has advised that their arrival is imminent, initiate rapid transport once BLS procedures are underway, or, as dictated by SAED protocols.
6. During movement of the patient down flights of stairs and/or from the scene to the ambulance, limit disruptions of CPR to optimally 15 seconds or less.

Guideline

To minimize disruptions, perform CPR at the head of the stairs and, at a pre-determined signal, interrupt CPR and move as quickly as possible to the next level where CPR can be resumed.

7. Enroute:

   a) Continue resuscitation efforts and reassess frequently (every 2-3 minutes):
      - effectiveness of CPR;
      - presence/absence of pulse, spontaneous respirations.

   b) If CPR and/or SAED results in return of a pulse, with or without spontaneous respirations:
      - monitor ABCs, level of consciousness;
      - continue assisted ventilation if the patient remains apneic or respirations appear inadequate; if respirations are adequate, administer high concentration oxygen;
      - obtain vital signs (including pupils); repeat at 3-5 minute intervals;
      - continue cardiac monitoring;
      - perform a **head-to-toe secondary survey;** manage identified problems;
      - obtain a baseline Glasgow Coma Score; repeat every 10 minutes, to a maximum of three times;
      - resume CPR/SAED protocols if cardiac arrest recurs.

   c) If cardiac arrest persists/recurs, continue CPR until:
      - effective spontaneous circulation and ventilation have been restored, or,
      - care is transferred to a higher level paramedic crew or to receiving medical/nursing staff, or,
      - radio or phone patch is established with a receiving physician, base hospital physician or other attending physician issuing a direct verbal order to the paramedic to discontinue efforts and/or gives further orders, and/or comply with the termination of resuscitation policy of the base hospital where applicable, and the paramedic complies, or,
      - the paramedic becomes exhausted and has already switched resuscitation duties with the other paramedic; in this instance, attempt a radio/phone patch with a physician prior to discontinuing efforts.

Cardiac Arrest – Children

Management

As per the *Cardiac Arrest (Adult) Standard* and the current *HSFO Guidelines* for pediatric BLS resuscitation with the following specifics:

1. **When managing a small child's or infant's airway:**
    - Ensure that the neck is not hyper-extended or hyper-flexed. If required, move the head through a range of positions to obtain optimal airway patency and effective ventilation. Placement of a folded towel/sheet under the shoulders may assist correct positioning.
    - Use an oropharyngeal airway of appropriate size. Alternately, use a nasopharyngeal airway if an appropriate size is available.
    - Keep the child's airway well suctioned at all times. Suction for 5-10 second intervals using appropriate positioning to obtain optimal airway patency and effective ventilation.
    - Manually remove a foreign body from the mouth only if it becomes visible when the mouth is opened either manually or spontaneously.
    - Use humidified oxygen if available.
    - Use a BVM and mask of appropriate size for the patient. In an infant, seal both the nose and mouth with the face mask. Ventilate slowly, with volume and force sufficient to cause visible chest rise.
    - Ventilate at rates appropriate for the age of the patient.
    - Have suction equipment readily available at all times in preparation for emesis.
    - Continually reassess and manage the airway to ensure patency.
2. Use the brachial pulse for pulse checks in an infant.
3. Wrap/blanket the child to prevent heat loss.

Also see the *Pediatric General Assessment and Management Standard and Additional Guidelines*.

Cerebrovascular Accident – (CVA, "Stroke") Conscious Patient – No Known History of Trauma

Assessments

1. Assume life/limb/function threats due to **intracranial/intracerebral hemorrhage and/or vascular obstruction.**
2. Consider other potentially serious conditions that may mimic CVA:
    - **hypoglycemia;**
    - **central nervous system (CNS) infection,** e.g. meningitis;
    - **severe hypertension, hypertensive emergency;**
    - **drug ingestion** e.g. cocaine (especially if a suspected CVA occurs in a patient <40 years of age).
3. Perform the primary survey. Elicit history - determine if the patient is a diabetic. Make a transport decision.
4. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
5. Perform minimum secondary survey physical assessments:
    - **Head & Neck:** assess pupils (size, equality, reactivity); note loss or abnormality of usual speech; inspect for facial asymmetry;
    - **Central Nervous System:** sensory loss (assess light touch); motor function loss, e.g. hand grips, arm/leg movement - spontaneous or upon request;
    - **Baseline Glasgow Coma Score:** note if verbal response is affected by loss/impairment of speech;
    - **Vital signs;**
    - **Note incontinence of urine/stool (if obvious).**

Guidelines

Perform other secondary survey assessments:

Injury Assessment:	if history, patient's condition and/or scene observations are suggestive of a fall secondary to the cerebrovascular accident;
Neck:	flex to assess stiffness and pain response if a central nervous system infection is suspect; (**exception** - if spine injury is suspect).

6. Make a second transport decision if still at scene.

Guidelines

With the introduction of the Ontario Stroke Strategy, Regional Stroke Centres and District Stroke Centres have been established in many areas. Patients who present with one or more signs and symptoms of a stroke (as outlined in the MOHLTC *EHS Acute Stroke Protocol*) are eligible for transport to a stroke centre if they can be transported to the centre within two hours of the clearly defined time of onset of symptoms, provided no contraindications exist (see *Acute Stroke Protocol*).

The paramedic must first notify their local CACC/ACS to confirm availability of the stroke centre.

Management

1. **Specific to cerebrovascular accident:**
    - secure the airway, assist ventilation as required; if indicated - administer high concentration oxygen; initiate rapid transport;
    - keep patient movement to a minimum; provide comfort and reassurance;
    - ensure adequate support for the patient's body/limbs during lifting;
    - position the patient semi-sitting if conscious, or in the recovery position if level of consciousness is decreased or there is excessive oral secretions, vomiting or inability to swallow saliva. Continually observe and manage the patient's airway;
    - if the patient is unable to close one or both eyes, gently close the eyelids manually; leave contact lenses in place.

Guidelines

Place extra padding and support beneath paralysed limbs. If necessary, apply tape or tape plus a gauze dressing or eye pad to keep the eyes closed. Current brands of contact lenses may be left in the eyes of an unconscious patient for up to 24 hours without damaging the cornea.

2. Manage other identified problems as per specific *Standards of Care.*
3. Transport minimum return priority Code 3.
4. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
    - emesis;
    - possible airway obstruction (if loss of tongue control, gag reflex);
    - agitation, confusion, aggressive behaviour;
    - decreasing level of consciousness; seizures.

Chest Pain – Non-traumatic

Assessments

1. Assume life threats (or potential threats):
    - **Acute Myocardial Infarction;**
    - **Thoracic Aortic Aneurysm;**
    - **Unstable Angina;**
    - **Pulmonary Embolism;**
    - **Pneumothorax, Tension Pneumothorax/Other Respiratory Disorders.**

Guidelines

Acute Myocardial Infarction

Atypical presentation is common in elderly >75 years of age; primary symptoms may be sudden weakness and syncope, +/- SOB, confusion, with minimal or no chest pain.

Thoracic Aortic Aneurysm

Severe, unrelenting tearing/ripping retrosternal pain radiating into the back.

Unstable Angina

Pain similar to acute myocardial infarction but not as severe, may occur at rest or may present as a change from usual pain pattern e.g. increase in frequency or severity or a decrease in the amount of exertion required to precipitate pain.

Pulmonary Embolism

Especially in females using oral contraceptives or recently post-partum; others at risk are post-operative and bed-ridden patients; symptoms may be minimal except for mild pleuritic pain, dyspnea, pallor and anxiety.

2. Perform the primary survey. Make a transport decision. Elicit history. Attempt to determine if pain is due to acute myocardial infarction or other serious disorder.
3. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
4. Perform minimum secondary survey physical assessments:
    - **Neck:** assess tracheal position, assess for jugular venous distension;
    - **Chest:** inspect, auscultate;
    - **Extremities:** assess skin colour, condition (wet/dry); assess for leg/ankle edema; assess distal pulses;
    - **Vital signs.**
5. Make a second transport decision if still at scene.

Management

1. ***Specific to chest pain:***
   - Manage primary survey problems, e.g. shock, respiratory distress, as per general and specific standards of care. Initiate rapid transport if indicated - all obvious/suspect acute myocardial infarctions; other serious disorders (obvious/suspect) as per *Assessments, point 1.*, or *Load and Go Patients Standard.*
   - Administer high concentration oxygen to **all** patients with chest pain. If an oxygen mask is not tolerated e.g. increases patient's anxiety or respiratory rate, switch to nasal cannula with oxygen flow at 6 litres per minute.
   - Position the patient sitting/semi-sitting unless contraindicated by concurrent problems or sitting is not tolerated by the patient.
   - Advise the patient to rest quietly; provide comfort and reassurance; attempt to calm the agitated/anxious patient.
2. Administer appropriate symptom relief medication in accordance with *ALS Patient Care Standards.*
3. Manage other identified problems as per specific *Standards of Care.*
4. **Enroute:** monitor; re-evaluate and manage problems as required. Repeat vital signs at 5 minute intervals if a serious disorder is obvious/suspect; prepare for expected problem:
   - If suspect serious respiratory, cardiovascular, vascular disorder, expect:
     - emesis;
     - respiratory distress;
     - shock;
     - respiratory/cardiac arrest.

Coma (Unconscious) – Markedly Decreased Level of Consciousness – Cause Unknown, No Known History of Trauma

Assessments

Attempt to elicit a specific cause for decreased level of consciousness and follow the standard for that problem. If the cause is not immediately obvious or cannot quickly be ascertained, follow the procedures outlined in this standard.

1. Assume life/function threats. Utilize the mnemonic - AEIOU TIPS as a guide to disorders which may produce alterations in level of consciousness.

   Guideline

   Remember that hypoglycemia and seizure disorders are common causes of coma. In cases of alcohol ingestion, do not assume that the patient is intoxicated.

2. Conduct a scene survey. Perform the primary survey: protect the C-spine if trauma is obvious, suspect or cannot be ruled out. Elicit history. Make a transport decision.
3. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
4. Perform a head-to-toe secondary survey to include a baseline Glasgow Coma Score. Perform trauma assessments if trauma is obvious, suspect or cannot be ruled out. If drug abuse is suspect, look for needle track marks on the arms and legs, or other signs. Assess for breath and body odours if suspect overdose/poisoning or diabetic coma.
5. If unable to determine cause of decreased LOC and/or diabetes is suspect, perform blood glucometry (if authorized).
6. Make a second transport decision if still at scene.
7. Collect medications/containers, chemical containers, drug paraphernalia, and other relevant items at scene for transport to the receiving facility. Document if police prevent removal of evidence from the scene.

Management

1. **Specific to coma/markedly decreased level of consciousness:**
    - establish/maintain airway patency as required;
    - assist ventilation if respirations appear inadequate;
    - administer high concentration oxygen;
    - unless contraindicated by concurrent problems, position the patient in recovery position. Alternately, position supine or supine with head elevated 30 degrees - maintain airway patency;
    - initiate rapid transport.

    Guideline

    If it is necessary to manually close the eyes, apply eye pad/gauze and tape. Contact lenses may be safely left in place for up to 24 hours.

2. Manage identified disorders amenable to field interventions e.g. hypoglycemia, hypothermia, overdose, trauma (see specific standards).

3. Enroute: monitor; re-evaluate and manage problems as required. Repeat vital signs at 5-10 minute intervals; prepare for one or more of the following problems based on working assessment:
    - problems related to identified injuries/conditions;
    - emesis;
    - violent behaviour, agitation;
    - seizures;
    - respiratory distress;
    - shock;
    - airway obstruction (complete/partial);
    - apneic spells; cardiorespiratory/respiratory arrest.

Diabetic Problem

This Standard applies to the following patients:

1. Information provided at scene, or identification indicating that **the patient is a known diabetic, and;**
2. Chief complaint/presenting problem is non-trauma related and consists of one or more of the following:
   - hypoglycemic (insulin) reaction - known/suspect;
   - violent, bizarre or unusual behaviour;
   - decreased level of consciousness;
   - seizure, stroke, syncope;
   - hyperventilation;
   - alcohol, drug ingestion;
   - nausea/vomiting/sweating/malaise/feeling unwell, other non-specific complaints.

Assessments

1. Assume a hypoglycemic (insulin) reaction until assessment indicates otherwise.
2. Perform the primary survey; elicit history; make a transport decision; assume hypoglycemia in insulin-dependent diabetics with a history of:
   - taking insulin - regular dose or extra/excessive dose(s);
   - missed/delayed meal, e.g did not eat on time, or ate too little, excess alcohol intake;
   - exercising more than usual without adjusting insulin dose or food intake;
   - recent/on-going alcohol and/or drug abuse;
   - recent illness.
3. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
4. Perform blood glucometry (if authorized).
5. Perform minimum secondary survey physical assessments:
   - **Skin:** assess colour, condition, state of hydration;
   - **Mouth:** note state of hydration, breath odours;
   - **Central nervous system:** assess pupils; obtain baseline Glasgow Coma Score; assess sensation/motor function **if stroke is evident or evolving;**
   - **Vital signs.**
6. Make a second transport decision if still at scene.

Management

1. If indicated based on assessment:
    - administer high concentration oxygen;
    - restrain the patient;
    - initiate rapid transport.
2. Administer appropriate symptom relief medication in accordance with *ALS Patient Care Standards*.
3. Manage seizures, cerebrovascular accident, other identified problems as per specific *Standards of Care*.
4. Enroute: monitor, re-evaluate and manage as required. Prepare for expected problems:
    - emesis;
    - agitated, aggressive or violent behaviour if hypoglycemia is suspect;
    - seizures, cerebrovascular accident, decreasing level of consciousness (if initially conscious);
    - airway compromise, inadequate respirations;
    - problems related to concurrent conditions.

Epistaxis – Non-traumatic

Assessments

1. Assume potentially life-threatening disorders:
   - **severe hypertension;**
   - **medication effects** e.g. anti-coagulants, ASA;
   - **foreign body in the nose.**

   Guideline

   If nasal/oral hemorrhage appears severe or on-going, assume that a large amount of blood has been swallowed with associated increased risk of vomiting, aspiration.

2. Perform the primary survey. Elicit history - attempt to determine if bleeding is new or recurrent. Ask about associated symptoms e.g. headache, blurred vision, cold/flu symptoms, etc. Make a transport decision.
3. Perform minimum secondary survey physical assessments:
   - **Vital signs;**
   - **Attempt to estimate blood loss:** e.g. hemorrhage duration, rate of flow, presence of clots, quantity of blood-soaked materials at scene, quantity of blood vomited;
   - **Note visible foreign body** (on gross inspection of the nares).

Make a second transport decision if still at scene.

Management

1. If indicated - administer high concentration oxygen; initiate rapid transport e.g. shock (obvious, impending), hypertensive emergency.
2. ***Specific to epistaxis:***
   - Attempt to reduce patient anxiety. Position the patient sitting or semi-sitting.
   - Encourage the patient to spit out blood clots. Have the patient lean forward to assist drainage and expectoration.
   - Control bleeding - apply or have the patient apply direct pressure over the soft parts of the nostrils, just below the bony septum. Apply pressure constantly for intervals of at least 5 minutes. If/when hemorrhage is controlled, advise the patient to breathe through the mouth and not to blow the nose.
   - Manage shock if impending/obvious - blanket; do not position the conscious patient supine if bleeding is on-going (increased risk of vomiting, aspiration); if level of consciousness is decreasing, position in the recovery position; use suction as required to keep the airway patent.

3. Enroute: monitor, re-evaluate and manage; prepare for expected problems:
    - emesis;
    - decreasing level of consciousness, stroke, seizure if severe hypertension is found on assessment i.e. diastolic BP >120 mmHg;
    - airway compromise, shock (if heavy bleeding, clots).

Extremity Pain – No Known History of Trauma

Assessments

1. Assume life/limb/function threats:
    - **vascular occlusion [venous/arterial] - peripheral vessel; intra-abdominal vessel** (may cause leg pain), intra-thoracic vessel (may cause arm pain);
    - **acute spinal nerve root compression** e.g. herniated disc;
    - **possible occult fracture** e.g. secondary to metastatic bone lesion; infection or foreign body, especially in patients with loss of peripheral sensation (diabetics, paraplegics).
2. Perform the primary survey. Elicit history. Attempt to determine whether injury may have occurred. Make a transport decision.
3. Perform minimum secondary survey physical assessments:
    - **Compare the affected extremity with the unaffected extremity** in terms of:
        - skin colour, temperature, condition;
        - swelling, deformity, tenderness;
        - distal pulses (including femoral if leg pain);
        - sensation (light touch); function (strength, range of motion, provided this does not cause discomfort for the patient).
    - **Vital signs.**

    Guidelines

    Perform other secondary survey assessments:
    - **Chest:** auscultate if a cardiovascular disorder is suspect;
    - **Abdomen:** inspect, palpate (if not obvious on inspection) for a pulsatile mass if abdominal aneurysm is suspect;
    - **BP in both arms:** if a thoracic aneurysm is suspect (arm pain +/- pallor, paresthesias, numbness).
4. Make a second transport decision if still at scene.

Management

1. ***Specific to the affected extremity:***
    - Keep patient and extremity movement to a minimum.
    - Protect the extremity from injury; cover; elevate.
    - **If an arterial occlusion is known/suspect:** e.g. extremity white, pale or mottled; skin cool to the touch; sensation and function reduced/lost:
        - administer high concentration oxygen;
        - place the extremity in a **dependent** position to augment blood flow, e.g. with the limb hanging down and the patient sitting upright; if this position is not possible, position the patient for comfort, keeping the extremity in line with the body;
        - transport minimum return priority Code 3; transport Code 4 if a life-threatening cause is suspect e.g. abdominal or thoracic aneurysm.
2. Enroute: monitor; re-evaluate (including distal pulse in an affected extremity at 5-10 minute intervals) and manage as required; prepare for expected problems:
    - emesis;
    - neurologic deficits, possible seizures if thoracic aortic aneurysm is suspect;
    - shock if abdominal aortic aneurysm is suspect.

Fever

Assessments

This category includes patient complaints of "burning up". Attempt to elicit a more specific complaint and follow the standard for that complaint. Otherwise, follow the *Medical Format, Short Form of General Standard of Care,* with the following specifics. (Also, see the *Pediatric General Assessment and Management Standard and Additional Guidelines*).

1. Assume potentially life-threatening infection, e.g. meningitis, sepsis.

Guidelines

Street drugs such as cocaine, amphetamines and other stimulants may also produce very high fever and predispose to heat illness.

Consider performing the following secondary survey assessments based on history, the patient's condition and scene observations:

- **Head & Neck:** inspect for scleral jaundice; signs of dehydration; swelling; enlarged glands; note breath odours; palpate for tenderness, masses; assess for neck stiffness;
- **Skin:** inspect for jaundice, rash, open skin lesions, bruising, needle tracks;
- **Chest:** inspect, auscultate;
- **Abdomen:** inspect, palpate;
- **Musculo-Skeletal:** inspect for redness, swelling around or over joints, palpate for tenderness around joints;
- **Note alterations in mental status** e.g. confusion, inappropriate speech/ behaviour, etc.

Management

1. Employ appropriate communicable disease precautions and utilize appropriate PPE.
2. Manage identified problems amenable to field interventions e.g. heat illness (see specific *Standards*).
3. Remove layers of clothing to reduce fever. Do not actively cool the patient.

Guidelines

- remove layers of clothing;
- keep blanketing to a minimum, or dispense with it completely in the febrile small child;
- keep the patient compartment cool e.g. just below room temperature.

4. Enroute: monitor; re-evaluate and manage problems as required; prepare for seizure activity in the febrile child (age 5 years or less) and in adults in whom serious disorders are suspect e.g. meningitis.

   If the patient becomes agitated:

   - repeat the primary survey (including pupillary assessment); manage critical findings;
   - keep light low inside the patient compartment as long as it does not hinder appropriate patient monitoring and care;
   - restrain the patient if necessary.

Guidelines

Definition

Meningitis is a bacterial or viral infection which occurs when organisms enter the meninges overlying the brain and spinal cord via the bloodstream, sinuses, or middle ear. Organisms may also enter through a head wound or skull fracture. The resulting infection inflames the meningeal membranes covering the brain and spinal cord.

Suspect the diagnosis in the following types of patients:

History

1. Fever over 38°C, chills, malaise, severe headache and vomiting, photophobia, altered mental status (ranging from aggressive behaviour and agitation to lethargy, drowsiness, stupor and coma).
2. In an infant: fretfulness or lethargy with disinterest in familiar faces and toys; refusal to eat, and profuse vomiting.

Physical

Neck stiffness, pain, resistance on attempted flexion; photophobia; altered mental status; seizures; may develop an ecchymotic rash.

Management

Initiate high concentration oxygen and rapid transport.

Points to Note

1. Kernig's Sign: Pain in the neck on extending the knee with the hip flexed; pain is due to increased meningeal irritation.
2. Brudzinski's Sign: Reflex flexion of the knees to reduce pain of meningeal irritation when the neck is flexed.

Gastrointestinal (GI) Bleeding, Vomiting, Coughing Blood; Passing Blood Rectally

Assessments

1. Assume potential life threats:
    - **Esophageal varices:** e.g. due to alcoholic liver disease (vomiting frank blood, usually in large quantities);
    - **Peptic ulcer;**
    - **Gastric/intestinal disease** e.g. obstruction, tumour, inflammation;
    - **Lung tumour, other lung diseases** (hemoptysis).
2. Perform the primary survey; elicit history. With oral hemorrhage, attempt to determine whether blood is being vomited or coughed up (if not immediately obvious, or the patient is uncertain).

    Make a transport decision.
3. Perform minimum secondary survey physical assessments:
    - **Abdomen -** inspect, palpate;
    - **Chest -** inspect, auscultate (if vomiting or coughing up blood);
    - **Estimate degree of blood loss -** e.g. duration of hemorrhage, rate of flow, presence of clots, quantity of blood-soaked or blood-filled materials;
    - **Note obvious coffee-grounds emesis, melena, frank blood;**
    - **Vital signs.**

    Make a second transport decision if still at scene.

Management

1. Clear the airway and assist ventilation if oral hemorrhage is compromising one or both. If indicated, administer high concentration oxygen; initiate rapid transport.

    Guideline

    If the patient appears stable (including vital signs), but a potentially serious disorder is suspect based on assessment, it is advisable to administer a high concentration of oxygen. Use judgement.
2. If the patient is vomiting and/or coughing up bloody material: position sitting up or semi-sitting and leaning forward if possible; if level of consciousness is decreased, position in recovery position with head slightly elevated. If the patient is bleeding rectally, position supine.

3. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
    - emesis;
    - airway compromise, aspiration (if vomiting is excessive, or if oral hemorrhage is massive);
    - further bleeding;
    - shock.

Headache – No History of Trauma

Assessments

1. Assume potentially life-threatening underlying disorders:
   - **Intracranial/intracerebral events,** e.g. hemorrhage, thrombosis, tumour;
   - **Central nervous system or other systemic infection;**
   - **Severe hypertension;**
   - **Toxic event/exposure,** e.g. hypoxia, hypercarbia, hypoglycemia, drug/alcohol ingestion/withdrawal, carbon monoxide poisoning (see relevant specific standards).
2. Perform the primary survey; elicit history; make a transport decision.

Guidelines

The following symptoms and signs indicate a serious underlying disorder or cause:

- sudden onset of severe headache with **no previous medical history** of headache;
- **recent onset** headache (days, weeks) with **sudden worsening;**
- **change in pattern** of usual headaches;
- any of the above accompanied by one or more of the following: altered mental status, decrease in level of consciousness, neurologic deficits, pupillary abnormalities (inequality, sluggish/absent light reactivity), visual disturbances, obvious neck stiffness and fever or other symptoms of infection.

3. Perform minimum secondary survey physical assessments:
   - **Central Nervous System:** pupillary size, equality, reactivity; sensation (light touch) and motor function, e.g. hand grips, arm/leg movement (spontaneous or upon request);
   - **Baseline Glasgow Coma Score;**
   - **Vital signs.**
4. Make a second transport decision if still at scene.

Guidelines

Neck stiffness may be absent or difficult to assess, especially in children and the elderly. Do not waste time assessing for neck stiffness.

In the field, assume that all headaches are serious and require hospital investigation. Excessive pre-hospital assessment is neither warranted nor appropriate.

Management

1. If indicated:
    - employ appropriate communicable disease precautions, including use of PPE;
    - administer high concentration oxygen;
    - initiate rapid transport.
2. **Specific to headache:**
    - Position the patient with head elevated at least 30 degrees or, position for patient comfort;
    - Attempt to calm and reassure the anxious patient;
    - Keep patient movement and manipulation to a minimum;
    - Keep light low inside the patient compartment as long as it does not hinder patient monitoring and care;
    - Cover the patient's eyes if photophobia (light sensitivity) is severe.
3. Manage identified problems amenable to field interventions e.g. hypoglycemia.
4. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
    - seizures, development of neurologic deficits if past history of same is associated with headache or if new onset severe headache;
    - emesis;
    - decreasing level of consciousness;
    - airway compromise.

Non-Specific Complaints

- Generalized weakness;
- Vomiting and/or diarrhea;
- Indigestion;
- Feeling shaky or unsteady;
- Feeling unwell;
- Stomach upset.

Attempt to elicit a more specific complaint and follow the standard for that complaint. Otherwise, follow the *Medical Format - Short Form of General Standard of Care.*

Overdose, Poisoning, Drug Ingestion – Known or Suspect

Personal and Patient Safety and Protection

1. Be aware that drug abusers may become violent. Request police assistance if violent behaviour is obvious or impending based on scene survey and initial assessment.
2. If sharps are encountered on-scene, dispose of them into an appropriate sharps container.

Assessments

1. Assume life-/limb-/function-threats secondary or in addition to overdose/poisoning. Assume multiple agents have been ingested, including alcohol.
2. Perform the primary survey: protect the C-spine and assess for injuries if trauma is obvious, suspect or cannot be ruled out.
3. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
4. Elicit history. **Attempt to identify/determine:**
   - **agent(s), quantity, time and route of administration or ingestion;**
   - **if a prescription drug - date of prescription; route of administration; compliance with same** e.g. number of pills left in the bottle prior to overdose;
   - **patient's degree of danger to self/others (conscious patient).**

Make a transport decision.

5. Perform a **head-to-toe secondary survey** including Glasgow Coma Score, and trauma assessments if trauma is obvious, suspect or cannot be ruled out. If the patient is uncooperative, attempt to perform at minimum:
   - **Central Nervous System:** pupillary size, equality, reactivity;
   - **Baseline Glasgow Coma Score;**
   - **Skin:** assess colour, condition; note jaundice, needle track marks, open skin lesions; note unusual breath or body odours e.g. turpentine, acetone;
   - **Vital signs;**
   - **Collect** all medication and chemical containers, drug paraphernalia, plants, mushrooms etc. for transport to the receiving facility. (**Note:** If police are at scene, they may prohibit removal of evidence - document this when completing the ACR.)
6. Make a second transport decision if still at scene.

Management

1. If indicated - administer high concentration oxygen; initiate rapid transport - all suspect overdoses, poisonings, drug ingestions where the potential for serious adverse effects is obvious or likely based on working assessment.
2. Attempt to calm the agitated patient. Restrain only if necessary, using the minimum force required to protect the patient and crew.
3. ***Specific to overdose/poisoning:***
   a) If the patient is unconscious or level of consciousness is decreased, manage as per the *Coma (Unconscious) Standard.*

   b) **Dilution of the ingested agent:**
   - dilute the agent only if advice is available regarding recommended dilution procedures e.g. product identification label and/or poison control center or base hospital physician **and** *the patient meets all of the following criteria:*
     - is fully conscious and understands instructions, i.e. Glasgow Coma Score of 15;
     - is cooperative;
     - has not seized or vomited spontaneously;
     - is not exhibiting periods of instability with respect to the ABCs, level of consciousness e.g. level of consciousness, behaviour not fluctuating between wakefulness and drowsiness/stupor.
   - dilute as per instructions provided; remove substances from the skin (as per *Chemical Injury Eye/Skin Standard*).
4. Manage identified concurrent problems, injuries as per specific *Standards of Care.*
5. Enroute: monitor; re-evaluate and manage as required; prepare for one or more of the following problems based on working assessment:
   - emesis;
   - sudden violent behaviour;
   - drug-induced seizures;
   - airway obstruction (if level of consciousness is decreased, decreasing);
   - respiratory distress; cardiorespiratory/respiratory arrest.

Guideline

If the patient is, or becomes agitated, consider drug-induced hyperthermia and the need to institute cooling (as per the *Heat Illness Standard*).

Respiratory Arrest – Adults

Assessments and Management

1. Assess airway patency; clear airway obstruction (see *Airway Obstruction Standard*).
2. Ventilate the patient at recommended rates/duration using an appropriate ventilating device/ technique in conjunction with high concentration oxygen.
3. Observe chest rise and auscultate lung fields to assess adequacy of ventilation. If deemed inadequate, perform as many of the following interventions as required to improve ventilation:
    - adjust airway/patient positioning;
    - clear/re-clear the airway;
    - reassess/adjust face-mask seal;
    - assess adequacy of ventilating device and technique and adjust if necessary;
    - manage chest trauma, e.g. sucking chest wound, flail chest;
    - use 2 person technique (if practical).
4. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
5. When moving the patient down flights of stairs and/or from the scene out to the ambulance, limit disruptions to ventilation to 30 seconds or less, optimally 15 seconds or less.
6. Elicit history concurrent with patient assessment and resuscitation. Attempt to identify a treatable cause and initiate immediate management, e.g. anaphylaxis secondary to bee sting.
7. Initiate rapid transport unless a paramedic authorized to perform intubation is at scene or dispatch has advised that arrival is imminent.
8. Enroute:
    a) Continue resuscitation and frequently reassess:
        - effectiveness of airway management, ventilations;
        - for return of spontaneous respirations;
        - pulse rate, quality.

    b) If spontaneous respirations resume:
        - continue to assist ventilation if respirations appear inadequate or respiratory/cardiac arrest is recurrent; continue high concentration oxygen;
        - monitor ABCs, level of consciousness; obtain vital signs and repeat every 5 minutes;
        - perform a **head-to-toe secondary survey** (if not already done); manage identified problems;
        - obtain baseline Glasgow Coma Score.

Respiratory Arrest – Children

As for the *Respiratory Arrest - Adults Standard* and other airway management specifics detailed in the *Standard for Cardiac Arrest - Children,* and:

Follow current *HSFO Guidelines* for pediatric BLS resuscitation.

Also see *Pediatric General Assessment and Management Standard and Additional Guidelines.*

Seizure – Adult/Child

Assessments

1. Assume life-threatening or potentially life-threatening underlying disorders.

Guidelines

a) In general, **the most common causes are:**
   - **known seizure disorder (non-compliance with medications is the most common cause, or medications not working);**
   - **meningitis, other central nervous system or systemic infection, other intracranial event** e.g. rupture of cerebral aneurysm (usually no prior history of seizure with any of these disorders);
   - **hypoglycemia** e.g. diabetics, alcohol abuse;
   - **alcohol withdrawal; drug ingestion/withdrawal (especially in young adults/teens with new onset seizures** e.g. cocaine ingestion, inhalant abuse).

b) **In patients >50 years of age with new onset or recurrent seizures, consider:**
   - cardiovascular disease, cerebrovascular disease;
   - cardiac dysrhythmias, impending cardiac arrest;
   - severe hypertension;
   - brain tumour, other intracranial event (hemorrhage, thrombosis).

c) **In pregnant patients:** eclampsia (especially in primips);

d) **In neonates:** infection, birth injury, hypoglycemia, congenital disorders, prematurity;

e) **In children <5 years of age:** febrile convulsions associated with infection (most common type of seizure in this age group).

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2. Perform the primary survey and make a transport decision. Elicit history - in the infant/small child, request information regarding:
   - recent febrile illness;
   - recent head injury;
   - recent immunization;
   - ingestion of medications, especially ASA.

   Observe and document features of an ongoing seizure. Note: incontinence of urine/stool; bleeding from the mouth; tongue bitten/biting.

3. If the patient has had a full body seizure and is now post-ictal, perform a **head-to-toe secondary survey including trauma assessments.** If the patient continues to convulse (full body), limit assessment to the primary survey until the patient is post-ictal.

   Make a second transport decision if still at scene.

   Guidelines

   With **non-full body seizures**, e.g. focal seizure, temporal lobe seizure, the patient is usually alert, can describe what is happening and is not in danger of hurting themselves. Trauma assessments will not usually be required. Use judgement.

Management

1. ***If the patient is convulsing (having a full body seizure):***
   - Establish a patent airway. Do not force a bite block into the mouth;
   - Perform airway maneuvers as required to restore/improve airway patency;
   - Ventilate only if the patient does not appear to be moving air (risk of gastric distension and aspiration is significant).

   Guideline

   Ventilation is usually not required unless the seizure is prolonged i.e. >2 minutes. A nasopharyngeal airway may be inserted in patients >5 years of age to assist ventilations in patients seizing >2 minutes.

   - Administer high concentration oxygen and loosen clothing;
   - Attempt to position the patient in the recovery position on a supportive surface;
   - Protect the patient from injury, e.g. place padding beneath the head, remove hazardous objects from the immediate surrounding area and the patient's pockets (if practical);
   - Gently restrain the patient if endangering themselves or others;
   - Ensure privacy, e.g. remove bystanders, cover the patient;
   - Initiate rapid transport.
2. ***If/when the patient is post-ictal, if not already done:***
   - Administer high concentration oxygen;
   - Keep patient movement, manipulation to a minimum;
   - Re-orient and reassure a confused patient;
   - Manage known/suspect hypoglycemia, other precipitating conditions which are amenable to field interventions. Initiate interventions during the seizure if possible;
   - Remove layers of clothing to cool the patient. Do not actively cool the patient.

Guidelines

If **non-full body** types of seizure are recognized by the paramedic e.g. focal seizure, temporal lobe seizure, these seizures do not require field interventions other than:

- recognition that the patient is experiencing a type of seizure;
- if tolerated, administer high concentration oxygen as a safety measure;
- comfort and reassurance;
- efforts to reorient a confused patient;
- observation for spread of a focal motor seizure to a generalized convulsive (full body) seizure.

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3. Enroute:

- Keep light low inside the patient compartment as long as it does not hinder appropriate patient monitoring and care;
- Whenever possible, do not use strobe lights and sirens on return priority Code 4 transport of patients with ongoing full body seizures or who are post-ictal secondary to a full body seizure;
- With respect to lowering body temperature in a febrile patient:
  - Remove layers of clothing but do not actively cool the patient.
- Other management interventions as required;
- Monitor; re-evaluate and manage as required; repeat vital signs, Glasgow Coma Score every 5-10 minutes; prepare for expected problems:
  - emesis;
  - post-ictal agitation, aggression;
  - incontinence;
  - recurrent seizures;
  - airway compromise (if the patient is still convulsing or has a decreased level of consciousness).
- Notify receiving hospital staff if the patient continues to seize, or seizes again enroute.

Guideline

Consider cardiac monitoring the post-ictal patient enroute, especially if a cerebro or cardiovascular event is suspect.

Shortness of Breath, Breathing Difficulty in Adults and Children – Not Related to Trauma

Assessments

Guideline

Phrase questions to allow the patient brief, or "yes/no" answers.

1. Assume life or function threats. Consider the following causes based on call information, chief complaint and/or presenting problem:

   a) **Acute Cardiovascular Disorders:** Acute myocardial infarction, impending cardiac arrest;

   Other: Angina, congestive heart failure, pulmonary edema or embolism (especially females of childbearing age using oral contraceptives; post-partum or post-operative or bed-ridden patients, patients with a history of "blood clot" in the leg/lung); congestive heart failure in children with known congenital heart disease.

   b) **Acute Respiratory Disorders:**

   - **Recurrent, episodic attacks of shortness of breath:**
     - **asthma;**
     - **chronic obstructive pulmonary disease (COPD);**
     - **aspiration of food or other foreign material** (may be new onset, or recurrent).
   - **Sudden onset acute respiratory disorders (usually no prior episodes):**
     - **partial airway obstruction:** e.g. viral inflammation, foreign body aspiration, epiglottitis;
     - **inhalation of toxic gases or smoke;**
     - **pneumothorax:** in asthmatics, COPD patients; spontaneous occurrence in tall thin young males;
     - **tension pneumothorax:** secondary to increasing respiratory distress associated with severe asthma or COPD;
     - **anaphylactic reaction.**

   c) **Other causes:** consider the following when no cause is apparent or ascertainable:

   - **overdose/poisoning:** e.g. methanol, aspirin, anti-freeze ingestion/overdose resulting in metabolic acidosis with clear lung fields and compensatory hyperventilation;
   - **metabolic acidosis:** e.g. caused by diabetes; Reye's Syndrome in children, both resulting in compensatory hyperventilation;
   - **cerebrovascular accident:** e.g. brain stem infarct/hemorrhage resulting in hyperventilation;
   - **chest infections:** e.g. pneumonia, pleurisy.

2. In the pre-hospital field, assume that all hyperventilation is due to an underlying (organic) disorder.
3. Perform the primary survey. Do not rely on strenuous chest wall movements or retractions to indicate good air entry.

   If Jugular Venous Distension (JVD) is present in a non-supine patient assume:

   - Congestive heart failure/pulmonary edema (associated with crackles/wheezes on chest auscultation + a history of prior episodes), **or**;
   - Tension pneumothorax, e.g. secondary to asthma, COPD (+/- decreased air entry and hyper-resonance over the affected lung, tracheal tug/deviation away from the affected lung).
4. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
5. Make a transport decision.
6. Elicit history concurrent with the primary survey.

   If the patient has **COPD or other chronic lung disease**, obtain information regarding use of, or increase in concentration of home oxygen and/or increased usage of regular "breathing" medications.

   If the patient has **asthma/COPD**, obtain information regarding previous mechanical ventilation/ICU admission - if positive - assume high risk until proven otherwise.
7. Perform minimum secondary survey physical assessments. Omit the secondary survey in the un-cooperative, distressed or agitated child. In all others:

   - **Head and Neck:** inspect for JVD, accessory muscle use; inspect and palpate for tracheal deviation; note stridor (crowing noises); in the infant and small child, look for nasal flaring, excessive drooling;
   - **Chest:** inspect for accessory muscle use, and auscultate for decreased air entry, wheezes and crackles;
   - **Lower Extremities:** inspect, palpate for redness, swelling, calf tenderness if pulmonary embolus is suspect; palpate for edema if congestive heart failure is suspect;
   - **Baseline Glasgow Coma Score;**
   - **Vital signs.**

   If a child's airway or breathing becomes further compromised during assessment, or the child becomes agitated and their condition is likely to worsen, discontinue assessment. Use judgement.
8. Make a second transport decision if still at scene.

Management

1. Initiate rapid transport if indicated - shortness of breath associated with one or more of inadequate breathing, severe respiratory distress, cyanosis, decreased level of consciousness and/or combativeness (also see *Load and Go Patient Standard*).
2. ***General Measures for Shortness of Breath:***
   - Position the patient in sitting or semi-sitting position. Allow the alert, small child to remain in preferred position. Loosen restrictive clothing.
   - Attempt to calm and reassure the patient. If the patient is hyperventilating, encourage slow inhalation and exhalation; advise the patient to relax as much as possible during exhalation.
   - Administer high concentration oxygen, humidified if possible.
   - Provide oxygen continuously, including during transfer to and from the ambulance.
   - When administering oxygen to a distressed/agitated child, hold the mask/nasal cannula close to, but not directly over the child's face, or have the parent/escort hold the device close to the child's face (see *Pediatric General Assessment and Management Standard* for a detailed approach to oxygen administration). Discontinue efforts to administer oxygen to the child if respiratory distress is increasing as a result of agitation caused by the oxygen administration device.
   - Encourage the patient to expectorate thick secretions (into K-basin or tissue). Do not force a distressed patient to cough (may dangerously reduce respiratory reserve).
   - Assist ventilation if breathing is deemed inadequate as evidenced by signs and symptoms of hypoxia (e.g. decreased LOC, cyanosis).
3. Administer appropriate symptom relief medication in accordance with *ALS Patient Care Standards.*
4. ***Specific to working assessments of:***

   a) **COPD:**

   See *Oxygen Therapy Standards for COPD* to guide oxygen therapy.

   b) **Pulmonary Edema:**

   Do not position the patient supine unless level of consciousness decreases and/or respiratory status deteriorates such that assisted ventilation is required.

   Do not elevate the legs.

   c) **Acute Myocardial Infarction/Angina:**

   Follow other management interventions outlined in the *Chest Pain -Non-traumatic Standard*, if AMI/angina is suspect or obvious.
5. Manage overdose, inhalation injury and other identified problems amenable to field management (see specific standards).

6. Enroute:
    - initiate/maintain management interventions;
    - maintain a comfortable temperature for the patient in the patient compartment;
    - reassess vital signs at 5-10 minute intervals if the patient is a CTAS 1 or 2;
    - monitor; re-evaluate and manage as required; prepare for problems expected on the basis of working assessment:
        - emesis;
        - shock if suspect pulmonary embolism, acute myocardial infarction, heart failure or tension pneumothorax;
        - airway obstruction if suspect disorders which may lead to obstruction e.g. epiglottitis, allergic reaction, foreign body;
        - decreased level of consciousness; respiratory arrest, cardiac arrest if severe respiratory distress.

Swallowing Difficulty or Pain – Dysphagia

If there is a history of foreign body - inhaled/swallowed, follow the *Foreign Body (Inhaled/Swallowed) Standard.*

Assessments

1. Assume life/function threats;
   - allergic reaction;
   - epiglottitis;
   - severe croup.
2. Perform the primary survey. Do not open and inspect a child's airway if epiglottitis is suspected.
3. Elicit history. Make a transport decision.
4. Perform minimum secondary survey physical assessments:
   - For an uncooperative child, limit assessment to the primary survey.
   - For an adult and cooperative child:
     - **Head and Neck:** inspect, palpate for swelling, masses, tracheal deviation **- if epiglottitis or severe croup is suspect in the small child, limit assessment to inspection only;**
     - **Chest:** inspect, auscultate for signs of respiratory distress; note stridor (crowing noises), hoarse voice, drooling; in infants and small children, also note - nasal flaring, barking cough, excessive drooling;
     - **Vital signs.**

   Discontinue assessment if the child's airway or breathing becomes compromised during assessment or the child becomes agitated and is in danger of deteriorating.
5. Make a second transport decision if still at scene.

Management

1. Administer high concentration oxygen if indicated.
2. Initiate rapid transport if epiglottitis or other form of airway obstruction is suspect.
3. If epiglottitis is suspect:
    - Do not place an oxygen mask **directly over** a small child's face if they are moving air well. Hold mask or nasal cannula near the child's face or have the parent/escort hold the oxygen administration device (see *Pediatric General Assessment and Management Standard* for details of oxygen administration).
    - Do not insert an airway or any other object into the child's mouth, unless the child loses consciousness or suffers a respiratory arrest.
    - Transport the child with the parent whenever possible.
    - Immediately discontinue oxygen if the child becomes agitated by, or starts to resist attempts to administer oxygen.
4. Administer appropriate symptom relief medication in accordance with *ALS Patient Care Standards*.
5. Position the patient sitting or semi-sitting. **Exception:** if the child has a **preferred** position, allow them to remain in that position.
6. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
    - emesis;
    - agitation;
    - complete airway obstruction.

Syncope (Faint) – No History of Preceding Trauma

Also includes near-syncope, and complaints of dizziness and vertigo.

Assessments

1. Assume life/function threats. Consider one or more of the following based on call information, chief complaint and/or presenting problem:
   - **Cardiac dysrhythmias; other cardiac disease,** e.g. valvular heart disease;
   - **Cerebrovascular accident,** e.g. transient ischemic episode;
   - **Hypovolemia, e.g. dehydration, anemia, occult internal hemorrhage (ruptured abdominal aortic aneurysm, ectopic pregnancy);**
   - **Heat illness,** e.g. exhaustion, heat stroke;
   - **Drug effects,** e.g. alcohol, β-blockers, Ca channel blockers, diuretics;
   - **Hypoglycemia: assume this to be the cause of syncope in diabetics until assessment indicates otherwise.**
2. Perform the primary survey, including C-spine protection and trauma assessments if injury is obvious or suspect. Elicit history. Make a transport decision.
3. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
4. Perform a **head-to-toe secondary survey,** including baseline Glasgow Coma Score and trauma assessments for obvious trauma or if trauma cannot be ruled out.

   Make a second transport decision if still at scene.

Management

1. If required based on assessment:
   - establish a patent airway; assist ventilation;
   - administer high concentration oxygen;
   - initiate rapid transport.
2. ***Specific to syncope:***
   - Position the patient supine, or in recovery position if no spine injury is suspect;
   - Keep patient movement to a minimum.
3. Manage identified problems amenable to field interventions, e.g. hypoglycemia, heat illness (see specific standards).

Guidelines

If the patient appears stable (including vital signs), but assessment suggests a potentially serious underlying disorder, administer oxygen. Use judgement.

4. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
   - emesis;
   - cardiac dysrhythmias/arrest, hypotension, shock if suspect cardiovascular disorder, hypovolemia or internal hemorrhage;
   - decreased level of consciousness, airway compromise, seizures, if suspect a serious underlying disorder.

If the patient complains of severe dizziness/vertigo, keep light low inside the patient compartment as long as it does not hinder patient care and monitoring.

Testicular Pain –
Non-traumatic or History of Minor Trauma, Strain

Assessments and Management

1. Assume threats to function:
   - **testicular torsion (twisting of the testicle on its vascular pedicle resulting in ischemia and testicular necrosis);**
   - **strangulated hernia;**
   - **referred pain: intra-abdominal disorder, back problem.**
2. Perform the primary survey; elicit history; palpate abdomen and take vital signs (minimum secondary survey assessments).

Guidelines

In the cooperative patient, consider inspection and palpation of the genitals. Ensure privacy. Apply a cold pack over a swollen scrotum or adjacent to it. Consider scrotal elevation to reduce pain: place a small rolled towel under the scrotum. Discontinue cold pack and/or elevation if pain worsens.

3. Transport minimum return priority Code 3 for suspect testicular torsion, strangulated hernia or other serious disorders.
4. Enroute: monitor; be prepared for emesis if pain is severe.

Vaginal Bleeding – (Non-Pregnant Patient, Pregnancy Unknown)

Assessments

1. Assume potentially life threatening disorders:
    - **Women of child-bearing age:** spontaneous abortion, ectopic pregnancy;
    - **In post-menopausal women:** tumours (benign/malignant).
2. Perform the primary survey. Elicit history. In women of child-bearing age: attempt to rule out pregnancy especially an ectopic pregnancy (+/- symptoms/signs of abdominal pain, fainting, light-headedness, dizziness; irregular, missed or short periods, light flow, etc.).

    Make a transport decision.
3. Perform minimum secondary survey physical assessments:
    - **Abdomen:** inspect; palpate;
    - **Perineum:** inspect **only if** bleeding is profuse; if possible, have inspection performed by a female paramedic; if the crew is all male, both crew members should be present during assessment - in all cases, obtain the patient's consent and preference (male or female paramedic, one or both crew members);
    - **Vital signs;**
    - **Note bleeding characteristics:** attempt to estimate blood loss (flow rate [slow/rapid], quantity of blood-soaked materials), colour (bright red, dark red), presence of clots, other tissue, fetal parts.
4. Make a second transport decision if still at scene.

Management

1. ***Specific to vaginal bleeding:***
    - administer high concentration oxygen if indicated - heavy or continuous bleeding, hypotension, shock; suspect threatened abortion or ruptured ectopic pregnancy;
    - if shock is obvious/impending, blanket the patient and initiate rapid transport;
    - if bleeding is profuse, place (or have the patient place) an abdominal pad or bulky dressing over the vaginal orifice; replace pads as required; document quantity used.
2. Enroute: monitor, re-evaluate and manage as required; prepare for expected problems:
    - emesis;
    - shock, if bleeding is heavy and continuous.

Vision Problem – Non-traumatic, No History of Foreign Body

This category pertains to:

- complete/partial loss of vision;
- blurring or other distortion of vision;
- eye pain.

1. For a vision problem associated with severe headache, follow the *Headache Standard.* For a vision problem associated with other neurologic deficits (e.g. hemiplegia) follow the *Cerebrovascular Accident Standard.*
2. For a vision problem presenting as an isolated complaint, follow the procedures outlined in this standard.

Assessments

1. Assume threats to life or function:
    - **intracranial, intracerebral or retinal hemorrhage/thrombosis** if the patient complains of **painless loss/decrease in vision;**
    - **acute glaucoma** if the patient complains of **painful loss/decrease in vision.**
2. Perform the primary survey. Elicit history.
3. Perform minimum secondary survey physical assessments:
    - **Eyes:** look for redness, swelling, tearing, abnormal movements and positioning;
    - **Pupillary size, equality and reactivity;**
    - **Gross vision assessment:** determine if there is loss or distortion of vision if the patient is able to cooperate and able to open the affected eye to allow gross assessment of visual acuity e.g. counting fingers, reading large print; note if contact lenses/glasses are normally worn and if present/absent during vision assessment;
    - **Baseline Glasgow Coma Score:** if a neurologic disorder is suspect;
    - **Vital signs.**

Management

1. Administer high concentration oxygen to patients with suspect vascular hemorrhage or occlusion (sudden, painless, complete or partial loss of vision).

2. **Specific to vision/eye problem:**
    - Keep patient movement and eye movement to a minimum;
    - If requested, assist the patient with contact lens removal. Patch the affected eye to reduce movement and photophobia;
    - For complaints of light-sensitivity or headache, dim the lights inside the patient compartment only if adequate patient care and monitoring can still be carried out;
    - Position the patient supine with head elevated 30 degrees.
3. For sudden, partial or complete vision loss, transport minimum return priority Code 3.
4. Enroute: monitor, re-evaluate and manage as required; prepare for expected problems:
    - emesis, if pain is severe;
    - development of other neurologic deficits, decrease in level of consciousness, seizures, if suspect intracranial/cerebral hemorrhage.

Section 3

Trauma Patient Categories

Introduction

As previously stated, specific standards of care have been developed not on the basis of diagnosis, but on the basis of:

- chief complaint as stated by the patient/bystanders;
- presenting problem as indicated by the patient/bystanders;
- immediately obvious primary survey critical findings, e.g. penetrating chest injury.

For all trauma patient categories discussed in this section, refer to the *Trauma Format - Short Form of General Standard of Care* to follow. Each patient category in this section will include:

- key statements in short form extracted from the *General Standard of Care;*
- standards specific to the injury being discussed;
- guidelines where considered appropriate (denoted by a ruled box titled as "Guideline(s)");

Key Code for Trauma Mnemonics and Short Forms

AVPU

Alert	
Verbal Stimuli	patient responds to talking/shouting
Painful Stimuli	patient responds to pinching fingers/toes
Unresponsive	patient does not respond to any stimuli

Inspect for: CLAP(S)(D)

Contusions/**C**olour/**C**yanosis/**C**ontamination

Lacerations

Abrasions/**A**symmetrical motion/**A**bdominal breathing (diaphragmatic)

Penetrations/**P**unctures (entrance, exit)/**P**rotruding objects or organs

(S)welling/**(S)**ucking wounds/**(S)**plinting/**(S)**ubcutaneous emphysema

(D)istension/**(D)**eformity/**(D)**ried blood/**(D)**iaphoresis

Palpate for: TIC(S)(D)

Tenderness

Instability

Crepitus

(S)welling/**(S)**ubcutaneous emphysema

(D)eformity

Trauma Patient Assessment (Overview)

Scene Survey/Personal and Patient Protection and Safety

- Environment
- Mechanism of Illness
- Casualties
- Additional Resources Required
- Personal Protective Equipment (PPE)

Patient Communication

- Identify/Introduce Self
- Obtain Patient Consent
- Obtain Event History

Primary Survey

- General Appearance of Patient
- Level of Consciousness (AVPU)
- C-Spine Considerations
    - Advise patient to remain still.
    - What Happened?
    - Chief Complaint?
    - Associated Complaints?
- Airway – assess patency
- Breathing (Chest Assessment) – Look/Listen/Feel
- Circulation – Pulse/Gross Bleed/Skin
- Neck
- Abdomen
- Pelvis
- Femurs

Perform critical interventions to establish, improve and/or maintain ABCs. Perform C-Spine Immobilization (assess back and posterior during immobilization).

Transport Decision

- Determine the need for rapid transport ("Load & Go")
- Determine CTAS level

History

- Symptoms
- Allergies
- Medications
- Past Medical History
- Last Meal
- Event History

Vital Signs

- Pulse
- Respirations
- Blood Pressure
- Pupils
- Skin
- Glasgow Coma Score (see specific Standards)
- Pulse Oximetry (if available)

Secondary Survey

- Head and Face
- Neck
- Chest/Cardiovascular
- Abdomen/Pelvis
- Back/Posterior
- Skin/Extremities
- Neurologic Exam

Note: Secondary survey is based on patient condition and specific standards.

Transport Decision (if not already enroute)

Trauma Format – Short Form of General Standard of Care

Personal and Patient Safety and Protection

1. When serious or multiple trauma is likely based on call information and/or scene observations, bring all essential equipment to the scene (site of patient contact), to include at minimum:
    - long backboard and/or adjustable break away stretcher;
    - head immobilization device (where supplied);
    - First Response Kit(s);
    - portable suction unit.
2. Utilize scene information/observations to determine if additional ambulances or other assistance, e.g. fire, police, are required. For multiple victims, initiate triage as per Multiple Casualty Incident (MCI) principles.
3. If the victim must be extricated, immobilize the neck before beginning extrication.
4. Utilize emergency rapid extrication procedures if personal safety has been secured and:
    - scene survey identifies condition(s) which may immediately endanger the victim, e.g. leaking gasoline;
    - primary survey identifies condition(s) requiring immediate interventions which cannot be performed inside the entrapment compartment.

Assessments

1. Assume the existence of serious or life/limb/function-threatening injuries and possible underlying medical disorders (alcohol/drug abuse) until assessment indicates otherwise.
2. Unless extrication or other problems cause delays, limit on-scene time to under 10 minutes.
3. Determine the chief complaint. Use scene observations to assist in establishing the Mechanism of Injury. Utilize Mechanism of Injury information to:
    - help direct physical assessments and determine transport priority(s);
    - determine the type of receiving facility(s), e.g. if field trauma triage guidelines are in place; if a regional trauma centre is accessible, etc.
4. If personal safety has been secured, begin assessment during extrication. Perform the trauma primary survey, intervening as required to restore, improve and maintain airway patency, breathing and circulation.
5. Elicit incident history concurrent with the primary survey or during the secondary survey. If an underlying medical disorder is suspect, elicit medical history in addition to trauma history.

6. With respect to the primary survey:
   - Approach the victim from the front when possible, and advise the victim to remain still. Introduce yourself.
   - Immediately initiate manual in-line stabilization of the neck if injury is obvious, suspect or cannot be ruled out. Using appropriate techniques, remove helmet to stabilize the neck and manage the airway. Maintain neck stabilization until the neck is adequately immobilized or injury is ruled out. Immobilize with a rigid cervical collar immediately following the primary survey or as soon as feasible.
   - Working with your partner, perform rapid assessment and critical interventions.
   - Only interrupt the primary survey to manage airway obstruction or cardiac arrest.
7. Immediately manage primary survey critical findings as follows (while maintaining C-spine control if injury is obvious or not yet ruled out):

   a) **Airway obstruction:**
      - Clear airway as per the *Airway Obstruction Standard* (Medical Section).
      - If airway remains obstructed, transfer the patient to a long backboard, "load and go"; try to clear the airway enroute. If foreign body obstruction is suspect, follow appropriate *Heart & Stroke Foundation of Ontario Guidelines*.
      - If patient becomes VSA, follow appropriate SAED protocols in accordance with *ALS Patient Care Standards*.
      - If airway is cleared, begin ventilation with high concentration oxygen and complete the primary survey.

   b) **Cardiac arrest:**
      - If applicable, follow appropriate SAED protocols in accordance with *ALS Patient Care Standards*, and/or
      - Transfer the patient to a long backboard (or spinal immobilization extrication device, depending on patient location), apply head rolls and tape, plus C-collar if it does not interfere with resuscitation and sufficient trained personnel are available to apply it.
      - "load and go" or follow approved Base Hospital Medical Directives.

   c) **Respiratory arrest, respiratory distress, decreased level of consciousness with inadequate respirations,** as evidenced by signs and symptoms of hypoxia (e.g. decreased LOC, cyanosis):
      - Administer high concentration oxygen (as close to 100% as possible).
      - Assist ventilation using a bag-valve-mask with reservoir, or ventilator.

   d) **Sucking chest wound:** seal with an occlusive dressing; allow an opening for air to exit, but not enter the wound.

   e) **Flail chest:** hand stabilize; assist ventilation if the flail appears to be causing inadequate respirations.

   f) **Impaled object:** do not remove; stabilize impaled objects.

g) **Shock:**

- restore/improve/maintain airway patency and ventilation as required;
- administer high concentration oxygen;
- control external hemorrhage;
- preserve body heat.

h) **External hemorrhage:**

Apply direct pressure to bleeding sites. Use other methods as required to control bleeding (see *Facial and Nose Injury Standard* management points 2.ii and 2.iii regarding oral hemorrhage control; *Soft Tissue Injuries Standard*).

i) **Use the mnemonic AVPU** to gauge level of consciousness - If level of consciousness is decreased, transfer and secure the patient to a long backboard or adjustable break away stretcher and prepare to "load and go". Ensure that the airway is patent and ventilation is adequate.

8. If the primary survey reveals critical injuries (as per *Assessment, point 7*), perform additional assessments of the abdomen, pelvis and legs before moving to the secondary survey. Prepare to "load and go" if assessment reveals:
   - tender, distended abdomen;
   - unstable pelvis;
   - bilateral fractured femurs.
9. Rapidly reassess the patient after each critical intervention or series of interventions. Perform further interventions based on the patient's response. Ensure that equipment and techniques are functional and effective.
10. With respect to transport decisions based on primary survey findings:

    a) if a "load and go" problem is identified as per *Assessments points 7 and 8*, and/or as per *Load and Go Patient Standard*:

    - maintain C-spine control; if not already done: apply a rigid cervical collar and transfer the patient to a long backboard or adjustable break away stretcher; assess the patient's back during transfer to the board;
    - immobilize in order, the spine, pelvis, legs and leaving the head to be immobilized last; cover the patient with a blanket;
    - initiate rapid transport;
    - perform further assessment and management enroute.

    b) If a "load and go" problem is not identified, remain at scene, situation permitting, and continue assessment and management. If spinal injury is obvious or suspect, transfer the patient to a long backboard or adjustable break away stretcher prior to conducting the secondary survey.

11. With respect to the secondary survey:
    - Perform a **head-to-toe** assessment for obvious or suspect major/multiple trauma.
        - If history, Mechanism of Injury, scene observations and/or the patient's chief complaint point to a single system injury, e.g. amputation, and the primary survey reveals no critical findings, assess at minimum:
            - the injured organ/system;
            - other body parts/systems likely to be injured (see specific standards);
            - vital signs.

          If doubt exists regarding the extent and number of injuries, perform a head-to-toe secondary survey.
        - Perform a medical assessment if a medical disorder is suspect, i.e. caused or contributed to the injury.

    Guidelines

    Remember that drugs and alcohol decrease pain response. Be thorough.

    Guidelines

    To recall components of the head-to-toe trauma assessment, use mnemonics:

    Inspect for **CLAP(S)(D);**
    Palpate for **TIC(S)(D).**

    For an explanation of the mnemonics, see the *Key Code for Trauma Mnemonics and Short Forms* (page 3-2).

12. If the patient's condition worsens during the secondary survey, repeat the entire primary survey; manage critical findings as required. Ensure that equipment and techniques are functional and effective.

13. Make a second transport decision if the secondary survey is completed at scene. "Load and go" if the secondary survey reveals additional "load and go" problems.

14. Make additional scene observations, collect medications/other identification for transport. Blanket the patient (if not already done).

15. Formulate a working assessment (if not already done).

Management

1. Initiate management interventions for primary survey critical findings (as outlined under *Assessments - point 7*) and as detailed in standards of care for specific injuries.
2. In the stable (or stabilized) patient, initiate/finish dressing, bandaging, splinting/immobilization and other non-critical interventions, either at scene or enroute, depending on the patient's condition and the paramedic's transport decisions.
3. Continually monitor the patient and re-evaluate as required. If airway patency, breathing, circulatory status and/or level of consciousness deteriorates, repeat the primary survey and immediately manage identified problems. Ensure equipment and techniques are functional and effective.

Transport

1. Secure the patient and transport to the ambulance. Secure the patient, stretcher and equipment inside the ambulance. Where indicated (see specific standards), secure and immobilize the patient a long backboard or adjustable break away stretcher prior to moving to the ambulance.
2. Position the patient as dictated by condition and/or comfort.
3. Transport the patient to a receiving facility as directed.
4. Enroute:
    - Attend to the patient at all times.
    - Complete the history and/or secondary survey, as time and the patient's condition permits.
    - Initiate/maintain appropriate management interventions.
    - Give the patient nothing by mouth (keep NPO) unless otherwise stated in specific standards.
    - Provide comfort and reassurance; ensure privacy as much as possible; maintain a comfortable temperature for the patient in the patient compartment.
    - Continually monitor airway, breathing, circulation and level of consciousness; repeat vital signs at 5 minute intervals and Glasgow Coma Score at 5-10 minute intervals for all CTAS 1 and 2 patients unless prohibited by very short transport time and/or the severity of the patient's condition. Vitals are to be monitored appropriate to the patient's condition in other cases.
    - Prepare for problems expected on the basis of working assessment - have necessary equipment/supplies readily accessible, and where applicable, set up to deal with expected problems.
    - Provide a radio report to dispatch and/or the receiving facility (as per *Section K - General Standard of Care*). Notify the receiving facility of all incoming Code 4 patients.

5. Change destination to the closest or most appropriate hospital emergency unit if the patient's condition deteriorates enroute, such that survival to the directed receiving facility is questionable. Notify dispatch of destination changes.
6. Complete the transfer of patient care responsibility and written report(s) as per *the General Standard of Care, Sections M and N.*
7. If minimum required assessments and/or management interventions are not performed, document specific reasons, or ensure that routine documentation clearly and succinctly reflects the situation at scene and/or enroute.

Abdominal/Pelvic Injury – Blunt, Penetrating

Assessments

1. Assume life-/function-threatening injuries:
    - **rupture, perforation, laceration, hemorrhage - organs and/or vessels in the abdomen and potentially in the thorax**;
    - **spinal cord injury;**
    - **concurrent injuries** e.g. head, neck.
2. Conduct a scene survey, determine M. of I. Perform the primary survey; make a transport decision.
3. Elicit incident history; perform a head-to-toe secondary survey. Note obvious bleeding sites. Estimate blood loss. Note urine colour if the patient voids.

Guidelines

Be aware: patients with spinal cord injury or altered sensorium may not complain of abdominal pain; abdominal tenderness and guarding may also be absent. Maintain a high index of suspicion for internal injury if the M. of I. suggests same.

Management

1. **Specific to all abdominal injuries:**
    - immobilize the neck and spine if indicated - all major blunt/deceleration injuries; if the presence of a spinal injury is questionable;
    - administer high concentration oxygen - all major blunt injuries (tender, distended abdomen; unstable pelvis); all penetrating injuries, others if in doubt regarding the severity of underlying injury;
    - manage shock;
    - "load and go" - tender/distended abdomen, unstable pelvis; shock.
2. Specific to **penetrating abdominal injury:**
    - manage primary survey findings - control external hemorrhage; stabilize impaled object(s);
    - "load and go" - shock; severe, uncontrolled hemorrhage;
    - cover protruding intestines - use moist sterile large, bulky dressings or a lint-free towel moistened with saline or water, or cover with non-adherent materials, e.g. plastic wrap; do not attempt to push intestines back into the abdomen**;**
    - seal abdominal puncture wounds with an occlusive dressing (wound may communicate with chest cavity).

3. **Specific to pelvic fractures:**
    - secure the patient to a long backboard or adjustable break away stretcher;
    - avoid placing straps or ties over the pelvic area;
    - secure and immobilize the lower limbs to prevent additional pelvic injury.

    Guideline

    A spinal immobilization extrication device or other type of pelvic stabilization device (if available) may also be used to stabilize a pelvic fracture, but do not prolong scene time to apply this device if the patient is unstable.

4. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
    - problems related to concurrent injuries;
    - emesis;
    - distal neurovascular compromise;
    - shock; respiratory distress/arrest if concurrent thoracic injury.

Amputation, Avulsion – Complete/Partial

Assessments

1. Assume life/limb threats:
    - **hemorrhagic shock if bleeding is severe;**
    - **loss of limb;**
    - **loss of function (partial amputation/avulsion).**
2. Conduct scene survey, determine M. of I. Perform the primary survey. Make a transport decision.
3. Elicit incident history; perform secondary survey assessments:

    i) Inspect **injury site** for:
    - bleeding, e.g. flow rate, arterial injury (bright red "spurting" blood), colour, estimated blood loss prior to paramedics arrival (quantity of blood-soaked materials, blood on ground/floor, etc.);
    - injury extent, e.g. complete/partial skin or appendage loss; exposed bone;
    - impaled objects, visible contamination, obvious foreign bodies.

    If there is a **partial amputation/avulsion,** assess distal function:
    - skin colour/condition, temperature, pulse; sensation (light touch);
    - function (use, strength, and/or mobility compared to usual level).

    Perform other assessments based on history, M. of I., scene observations.

    ii) **Vital signs.**
4. Make a second transport decision if still at scene.

Guidelines

If injury site is dressed before paramedic arrival, use judgement when deciding to remove the dressing. If first responder skills are known and trusted, and/or bleeding appears controlled and distal pulse/colour are acceptable, leave dressing intact.

Management

1. For multiple trauma, priorize injuries for management: airway, breathing, circulation, external hemorrhage control, **before** dressing and splinting an amputated/avulsed part **- exception -** if dressing, splinting is required to control hemorrhage.
2. **Specific to *amputation/avulsion:***
   i) With respect to the **injury site:**
      - control hemorrhage; if hemorrhage cannot be controlled by usual methods, apply and inflate a BP cuff until bleeding stops; administer high concentration oxygen if hemorrhage is severe; attempt to remove rings, tight band jewelry;
      - cleanse wound of gross surface contamination;
      - if a partial amputation/avulsion, place remaining tissue or skin bridge in as near normal anatomic position as possible;
      - cover stump with a moist, sterile pressure dressing, followed by a dry dressing; take care not to constrict or twist remaining tissue;
      - splint/immobilize; elevate if possible.

   ii) Look for or request bystanders to look for the severed part. If it cannot be found prior to transport, advise searchers at scene how to handle the part if located, and provide the name of the receiving hospital destination. Do not delay transport if the part is not found by the time the paramedics are ready to depart from the scene.

   iii) **With respect to the amputated/avulsed part:** if located prior to ambulance transport:
      - preserve all amputated tissue;
      - if the part is grossly contaminated, gently rinse with saline;
      - wrap/cover the exposed end with moist, sterile gauze;
      - place the part in a small water-tight container/plastic bag and immerse in cold water (with a few ice cubes added, if available).
3. Transport return priority Code 4: patients with complete or partial limb amputations; complete amputations of the thumb or penis; eye avulsions.

   Guidelines

   Partial amputations of the thumb or penis should be transported minimum return priority Code 3. Rapid transport (Code 4) may be indicated depending on the nature and severity of the injury. Complete digit amputations (thumb excluded), large skin avulsions (1% of body surface area or greater) should be transported return priority Code 3.

4. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
   - emesis;
   - problems related to concurrent conditions;
   - shock (if bleeding is severe).

Chest Injury – Blunt, Penetrating

Assessments

1. Assume life/function threats:
    - **tension pneumothorax,** e.g. deceleration injury resulting in tear of a bronchus or lung; penetrating injury which seals off and traps air inside the chest cavity;
    - **cardiac tamponade; intra-thoracic hemorrhage** (blunt or penetrating injuries);
    - **flail chest, myocardial contusion** (blunt injury);
    - **sucking chest wound** (penetrating injury);
    - **spinal cord injury** (blunt or penetrating injuries);
    - **other concurrent injuries**, e.g. head.
2. Conduct a scene survey, determine M. of I. Perform the primary survey. Make a transport decision.
3. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
4. Elicit incident history, perform a **head-to-toe** secondary survey. For all **penetrating chest wounds:**
    - inspect and/or palpate for entry/exit wounds;
    - assess carefully for tracheal deviation, JVD; inspect the chest and auscultate for decreased air entry over one or both lung fields (possible pneumothorax, tension pneumothorax, hemothorax);
    - assess for signs of airway and/or vascular penetration - frothy/foamy bleeding, sucking wounds, gurgling/crackles/wheezes on chest auscultation.

    Make a second transport decision if still at scene.

Guidelines Regarding Assessment Findings - Major Injuries/Problems

- **Cardiac tamponade or tension pneumothorax** = Shock + JVD;
- **Tension pneumothorax** = Shock + JVD + hyperresonance of the chest wall over the affected lung + tracheal deviation away from the affected lung; (all signs may not be present depending on the size and progression of the tension pneumothorax);
- **Hemothorax** (if no other sources of shock) = Shock + flat neck veins + decreased breath sounds; consider tension hemothorax if shock + JVD + decreased breath sounds with dullness + tracheal deviation away from affected lung;
- **Flail chest** = Paradoxical movement of an injured chest wall segment with respiration;
- **Sucking chest wound** = Air bubbling in/out of an open chest wound +/- patient having difficulty moving air despite an open airway.

Management

1. ***Specific to all chest injuries:***
    - stabilize, immobilize neck and spine if indicated - all major blunt injuries involving acceleration/deceleration forces, high velocity penetrating injuries if cord injury obvious/ suspect, others if in doubt regarding cord injury;
    - administer high concentration oxygen: all major blunt and penetrating injuries;
    - assist ventilation as required; for patients with a suspected pneumothorax, ventilations should be delivered with a lower tidal volume and rate of delivery to prevent exacerbation of increasing intrathoracic pressure. Use judgement;
    - position patient semi-sitting or sitting if cord injury has been ruled out, or, elevate head of backboard/adjustable break away stretcher 30 degrees if patient is immobilized in supine position; incline patient/board towards the injured side if possible;
    - manage shock if obvious/impending;
    - "load and go" - all life-threatening chest injuries/problems (as listed under *Assessments, point 1.*), and associated indications as per *Load and Go Patients Standard*.
2. **Specific *to flail chest:***
    - immobilize and secure the patient supine on a long backboard/adjustable break away stretcher;
    - hand stabilize, then strap/tape a small towel/blanket roll over the flail segment.
3. **Specific to *open/sucking chest wounds:***
    - control external hemorrhage, stabilize impaled objects;
    - seal wound with an occlusive dressing taped on 3 sides only, e.g. gel defibrillator pad, petroleum gauze, plastic wrap;
    - apply dressing large enough to cover entire wound and several centimeters beyond the edges of the wound (to reduce the risk of the dressing being sucked into the wound);
    - incline the patient towards affected side or recline, affected side down unless prohibited by other conditions;
    - monitor for development of tension pneumothorax - if tension pneumothorax becomes obvious or suspect i.e. rapid deterioration in cardio-respiratory status, release occlusive dressings.

4. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
   - emesis, **and,** if severe/multiple trauma:
     - hemoptysis with possible airway compromise;
     - problems related to concurrent injuries;
     - shock;
     - cardiac tamponade;
     - tension pneumothorax;
     - cardiac dysrhythmias;
     - respiratory distress/arrest, cardiac arrest.

Guideline

If patient becomes VSA due to blunt trauma, follow appropriate SAED protocols in accordance with *ALS Patient Care Standards*.

Extremity Injury – Bone/Joint

Assessments

1. Assume potential threats to limb function:
   - neurovascular compromise;
   - hemorrhagic shock if severe external hemorrhage or obvious/suspect fractured femur(s).
2. Conduct a scene survey, determine M. of I.; perform the primary survey. Make a transport decision.
3. Elicit incident history. If history and M. of I. indicates an isolated extremity injury, perform **minimum secondary survey assessments** as follows:
   - **Examine the affected extremity:**
     - inspect, palpate for CLAP(S)(D), TIC(S)(D);
     - assess capillary refill, distal pulse;
     - sensory exam (pinch fingers, toes), movement (ask patient to move fingers/toes, or note spontaneous movements); assess active movement if the patient is cooperative and there is no obvious fracture/dislocation;
   - Perform other assessments as indicated on the basis of history, M. of I., patient's complaints, scene observations;
   - **Vital signs.**
4. Make a second transport decision if still at scene.

Guidelines

Recall the **5** ***P***s - indicators of compartment syndrome:

Pain
Pallor
Paresthesias
Paralysis
Pulselessness

Guidelines

In the leg, findings associated with compartment syndrome may include:

- calf pain when the foot is dorsiflexed;
- calf tenderness to palpation;
- numbness, loss of sensation over/in the 1st webspace.

Management

1. If a "load and go" situation exists after the primary survey:

   - transfer the patient to a long backboard/adjustable break away stretcher; secure; assess and splint major extremity injuries enroute, e.g. fractured femur, compound fracture of the tibia; splint at scene if sufficient resources are available to both splint and manage priority (ABC) assessments and findings.

   Splinting priorities are:

   1) spine (neck, thoraco-lumbar, head);
   2) chest wall/rib cage;
   3) pelvis;
   4) femurs, lower legs;
   5) upper limbs.

   If the patient's condition permits, splint minor fractures/sprains.

   Guideline

   A traction splint may be applied at the scene if an isolated femoral fracture appears to be the sole cause of hypotension/shock and the patient has no compromise of airway, breathing or neurologic status.

2. **Specific to extremity splinting:**

   i) If in doubt about the presence of a fracture/dislocation, splint (if the patient's condition permits).

   ii) **Prior to splinting:**

   - control hemorrhage, stabilize impaled objects;
   - advise the patient not to move the extremity;
   - explain procedures; warn of pain;
   - expose the injured area; attempt removal of tight bands, jewelry, clothes;
   - assess distal pulse/sensation;
   - irrigate compound fracture sites with sterile saline or sterile water if grossly contaminated; dress open wounds;
   - leave protruding bone ends as found; if ends remain visible after manipulation/in-line traction, cover ends with dry dressings and/or padding;
   - splint open and closed femur fractures with traction splints unless partially amputated;
   - if the distal pulse is absent or the fracture is severely angulated, apply gentle traction; if resistance or severe pain is encountered, splint as found;
   - pad rigid splints.

iii) **During/after splinting:**

- splint joint injuries as found - **exception** - knee dislocation with absent distal pulse - apply gentle traction to reduce; if resistance is met, splint as found;
- if adequate circulation/sensation is lost after splinting, gently re-manipulate or replace the extremity in its original position; if re-manipulation is not possible, or a pulse does not return, splint as is;
- immobilize joints above and below the injury site; secure splint snugly, from distal to proximal;
- re-assess distal pulse/sensation after splinting; leave finger/toe tips exposed;
- elevate the extremity when practical to do so;
- if feasible, apply a cold pack over the bandage/splint if swelling is obvious or expected.

Guidelines

- If an **elbow dislocation** is associated with obvious neurovascular compromise, consider contacting a receiving or base hospital physician for advice regarding manipulation or in-line traction.
- **Take care with the use of cold packs.** If neurovascular compromise appears related to deformity or vascular injury rather than to swelling, cold-induced vasoconstriction may worsen ischemia.
- **In children,** if splints do not fit, splint body parts together, e.g. arm-to-trunk, leg-to-leg, and pad in-between.
- A spinal immobilization extraction device may be used to stabilize a hip fracture, but do not prolong scene time to apply the device to an unstable patient. If a traction splint is unavailable or in use, simply immobilize the patient using a backboard/adjustable break away stretcher.

3. Enroute: monitor; re-evaluate and manage as required; re-assess distal neurovascular status in the affected extremity every 5-10 minutes if status was compromised on initial assessment; prepare for expected problems:
   - shock if there is associated major internal/external hemorrhage;
   - extremity neurovascular compromise;
   - emesis.

   Notify receiving staff enroute if there is obvious neurovascular compromise in the affected extremity.

4. Upon arrival, advise receiving staff that protruding bone ends were retracted during splinting (where applicable).

Eye Injury – Blunt, Penetrating

Assessments

1. Assume threats to vision; assume concurrent head/facial injuries.
2. Assess as detailed in the *Head Injury Standard*, plus:
    - Determine if there is loss or distortion of vision if the patient is able to cooperate and able to open the affected eye to allow gross assessment of visual acuity e.g. counting fingers, reading large print. Note if contact lenses/glasses are normally worn and if present/ absent during vision assessment;
    - Leave eyelids shut, if swollen shut.

Management

1. Multiple trauma patient: manage injuries affecting airway, breathing and circulation on a priority basis. Do not be distracted by gross eye injuries.
2. Specific **to blunt/penetrating eye injury**:
    i) **Control bleeding,** using minimum pressure if bleeding involves or is in close proximity to the globe.

    ii) **For obvious or suspected rupture/puncture of the globe:**
    - Manage on a priority basis when the patient's ABCs are stabilized.
    - Do not manipulate, palpate, irrigate or apply pressure or cold packs.
    - Stabilize an impaled object.
    - Cover the eye with a light dressing or cup-like object, e.g. paper cup, pediatric oxygen mask; do not apply pressure.
    - If the **eye is extruded (avulsed),** do not attempt to replace it inside the socket. Cover the eye with a moist, sterile dressing and cup-like object, and stabilize as for an impaled object.

    iii) ***General measures*, time and patient's condition permitting:**
    - Advise the patient not to rub the affected eye(s) and to keep eye movement to a minimum.
    - Cover the eye with a loose dressing. If injury is assessed as minor or the eye is swollen shut, omit dressings at the paramedic's discretion.
    - If the globe appears intact, apply a cold pack if swelling is present/expected.
    - Cover both eyes if injury/pain is severe in the affected eye. Explain reasons to the patient (to reduce sympathetic movement in the uninjured eye). Maintain reassuring voice contact while both eyes are patched.

3. Transport the patient supine, with head elevated approximately 30 degrees. Keep light low inside the patient compartment if it does not hinder patient care and monitoring.

   If the entire eye is avulsed (extruded), transport return priority Code 4.

4. Be prepared for emesis if pain is severe.

Facial and Nose Injury – Blunt, Penetrating

Assessments

1. Assess according to the *Head Injury Standard*. Assume concurrent head, C-spine injuries.
2. If nasal/oral hemorrhage appears severe or on-going, assume that a large amount of blood has been swallowed with associated increased risk of vomiting, aspiration.

Management

1. If indicated - initiate rapid transport e.g. airway compromise, massive oral hemorrhage, associated decreased level of consciousness and/or severe head injury.
2. Specific to facial injuries:
   i) **Establish/maintain a patent airway** with manual C-spine control if neck injury is obvious, suspect or cannot be ruled out:
      - Remove helmet as required for assessment/management.
      - If loss of tongue support is obvious, and airway patency cannot be achieved by other methods, attempt to pull the tongue forward with gentle manual traction (a gauze dressing placed over the tongue will improve grip).
      - Stabilize a fractured mandible if it is causing/contributing to airway compromise, e.g. hand stabilize; apply a roller bandage if the patient is not vomiting and intra-oral hemorrhage has been controlled, or apply a rigid C-collar.

   ii) **Control hemorrhage:**
      - Stabilize an impaled object; only attempt removal if the object is through the cheek or compromising the airway.
      - Apply manual pressure to the nostrils below the septum, for at least ten minutes, to control epistaxis.
      - Apply gauze and manual pressure to bleeding tooth sockets, or have the patient bite down on gauze.
      - Place rolled gauze inside the lips/mouth between the buccal mucosa and gumline if there is bleeding from mucous membrane surfaces.

iii) If oral hemorrhage remains uncontrolled despite measures outlined in ii) and:

- **the patient is unconscious/level of consciousness is decreased and C-spine injury is obvious or suspect -** use continuous suction; if the airway is still compromised and bleeding is profuse/continuous, immobilize the patient on a backboard/adjustable break away stretcher (if not already done); elevate head 30 degrees and tilt to the left side;
- **the patient is conscious and C-spine injury has been ruled out -** position the patient semi-sitting and leaning forward to assist drainage. Encourage the patient to expectorate blood. If nasal bleeding appears to be coming from the anterior part of the nose, have the patient tilt the head back slightly while applying pressure to the nostrils below the septum.

iv) As soon as feasible, e.g. when hemorrhage is controlled, administer high concentration oxygen if indications exist.

v) **If the patient is stable/stabilized:**

- where applicable, apply a loose dressing over the nose/ear to absorb CSF flow;
- immobilize a stable fractured mandible i.e. fracture not compromising the airway;
- cleanse, dress and bandage open wounds;
- apply a cold pack to swollen areas.

3. Elevate head of backboard/adjustable break away stretcher 30 degrees if the patient is transported supine and immobilized. Tilt the board/adjustable break away stretcher to the left side if airway is compromised, oral hemorrhage is ongoing or level of consciousness is decreased.

   Transport with the affected side down or board/adjustable break away stretcher tilted towards the affected side to allow CSF drainage from an affected ear (where applicable, and if this position is not contraindicated by other injuries).

   Transport the patient sitting or semi-sitting if not contraindicated by concurrent problems.

4. Transport **avulsed teeth/skin**: use cold fresh milk or saline for tooth transport; do not rinse/cleanse avulsed teeth; take care not to handle the tooth by the root. If bystanders have been asked to look for avulsed teeth/parts, advise them how to handle the tooth/part and provide the name of the receiving hospital (if known).

Guideline

If the patient is alert and stable, with no likelihood of decreasing level of consciousness or aspiration, replace a completely intact, avulsed tooth in the socket and have the patient bite down to stabilize.

5. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
    - epistaxis (nose, mid-face injury);
    - problems related to concurrent injuries;
    - emesis; possible aspiration if a large amount of blood has been swallowed;
    - decreasing level of consciousness, possible seizures if severe injury;
    - airway obstruction if severe injury, and/or massive or uncontrolled oral hemorrhage.

Foreign Bodies – Eye/Ear/Nose

Assessment and Management

1. General measures:
   - Advise the patient not to attempt removal or to discontinue attempts.
   - Inspect affected area for visible signs of foreign body, injury, bleeding, discharge.
2. Specific measures:

   i) **Eye:** Assume possible penetration of the globe, e.g. metal fragments thrown from high speed machinery.

   - If the object is visible and the patient is cooperative, position the patient supine and flush the eye with water/saline.

Guideline

If flushing is unsuccessful, attempt manual removal if the object is not on the cornea, e.g. using a wet cotton-tipped swab or gauze, or tip of gloved finger.

ii) **Ear:** Assume the potential for perforated ear drum if a blunt/penetrating object was inserted. Leave the object in place (if visible).

iii) **Nose:** Assume the potential for airway compromise.

- position the patient sitting/semi-sitting;
- leave the object in place;
- discourage nasal breathing;
- enroute: monitor for airway compromise if inhalation is likely to occur, e.g. in a small child.

Foreign Body Inhaled/Swallowed (Known/Suspect) – Conscious Patient

Assessments

1. Assume the potential for airway obstruction. Be aware of the classic triad of symptoms/signs of inhaled foreign body:
    - **cough;**
    - **wheezing** (stridor if the object is obstructing the larynx or trachea);
    - **wheezes, decreased air entry on auscultation over the affected lung, +/- indrawing.**
2. Perform the primary survey. Elicit incident history. Make a transport decision.
3. Perform minimum secondary survey physical assessments:
    - **Head/Neck:** inspect, palpate; note swelling, tenderness, tracheal position/tug;
    - **Chest:** inspect, auscultate;
    - **Vital signs.**

    In the anxious or uncooperative small child with obvious partial airway obstruction, limit physical assessments to the primary survey.

    Make a second transport decision if still at scene.

Guidelines

With respect to chest auscultation, wheezing may be heard only over one side of the chest if a foreign body has entered the right or left main stem bronchus. Wheezing may be diffuse if particulate/liquid foreign matter has been inhaled and/or the nature of the material/object has triggered generalized bronchospasm. Consider the use of symptom relief medication if appropriate.

Management

1. If indicated based on assessment findings:
    - administer high concentration oxygen; assist ventilation;
    - initiate rapid transport - impending airway obstruction, respiratory arrest.
2. Specific to **inhaled/swallowed foreign body:**
    - position the patient sitting or semi-sitting;
    - do not apply an oxygen mask directly over the face of a small child who is moving air well; hold or have parent hold the mask close to the child's face (see *Pediatric Assessment and Management Standard* for detailed discussion of oxygen administration). Discontinue efforts to administer oxygen if the child becomes agitated by, or resists attempts to administer oxygen.

3. Enroute: monitor; re-evaluate and manage problems as required; prepare for expected problems:
   - emesis;
   - airway obstruction.

Genital Injury in the Male – Isolated Injuries

Assessments

1. Assume the potential for vascular injury, loss of function.
2. Elicit incident history, determine M. of I.
3. In the cooperative patient: inspect for **CLAP(S)(D);** palpate genitals and abdomen. Take vital signs.
4. Perform additional secondary survey assessments as indicated on the basis of history, the patient's condition and scene observations.

Management

1. **General measures:**
   - control external hemorrhage; attempt to calm and reassure the patient;
   - attempt to ensure privacy; prepare for emesis.

   i) **Blunt trauma - scrotum, erect penis:**
      - if the patient is cooperative: apply a cold pack over or lateral to the injury site; if the scrotum is swollen, elevate, e.g. with a towel roll; discontinue elevation if pain increases;
      - transport minimum return priority Code 3 if a fractured penis, or serious vascular or testicular injury is suspect.

   ii) **Amputation of penis:**
      - manage as per *Amputation, Avulsion - Complete/Partial Standard;*
      - transport return priority Code 4;
      - monitor, prepare for expected problems:
        - hypotension, shock if blood loss appears significant;
        - violent/bizarre behaviour (penile amputation is almost always self-inflicted).

   iii) **Avulsion of penile/scrotal skin:**
      - manage as per *Amputation, Avulsion - Complete/Partial Standard.*

   iv) **Foreign body - in/around penis:**
      - leave the object in place;
      - apply a cold pack if swelling is obvious/likely.

Head Injury – Blunt, Penetrating

Assessments

1. Assume life/function threats:
   - **intracranial and/or intracerebral hemorrhage;**
   - **neck/spine injuries; facial/skull fractures;**
   - **other concurrent severe injuries;**
   - **precipitating factors** e.g intoxication.
2. Conduct a scene survey, determine M. of I.; perform the primary survey with manual C-spine stabilization if spine injury is obvious, suspect or cannot be ruled out.

   Make a transport decision.
3. Elicit incident history including any loss/regain of consciousness; perform secondary survey physical assessments:

   i) In patients with multiple trauma, perform a **head-to-toe secondary survey**, including baseline Glasgow Coma Score and neurologic assessment of sensation/motor function;

   ii) In patients where history, M. of I. and scene survey support an assessment of **isolated head injury (including facial injury)**, e.g. blow to the head from a blunt object, perform at minimum:
   - **Head and neck:** inspect, palpate for **CLAP(S)(D), TIC(S)(D);**
   - **Neurologic exam:** pupillary size, reactivity and equality; sensation - light touch, pinch to fingers/toes; movement of fingers/toes, legs/arms - spontaneous or upon request; baseline Glasgow Coma Score;
   - **Other assessments as indicated** on the basis of M. of I., patient's complaints/ condition and scene observations;
   - **Vital signs.**

   iii) In all head injured patients, note emesis (including frequency), urinary/fecal incontinence (if obvious), abnormal posturing, agitation or fluctuating behaviour. Note mastoid bruising, periorbital ecchymosis, possible CSF from ears/nose (indications of basal skull fracture).
4. Make a second transport decision if still at scene.

Management

1. **Specific to head injury:**
    - If the patient is violent or extremely agitated, and all reasonable verbal efforts fail to calm the patient, restrain the patient; assess the need for police or other bystander assistance prior to restraining the patient, and request assistance if required.
    - Immediately stabilize the neck, and immobilize as soon as possible if C-spine injury is obvious, suspect or cannot be ruled out. Secure airway as required. Where applicable, remove helmet to ensure proper assessment and management.
    - Administer high concentration oxygen if indicated.
    - Assist ventilation as required with normal tidal volume and ventilatory rate to provide optimal oxygenation.
    - Hyperventilate at a rate of 20-24 breaths per minute if the patient is exhibiting signs and symptoms of cerebral herniation as evidenced by a rapidly deteriorating Glasgow Coma Score or GCS <9 with asymmetric pupillary reaction/asymmetric motor response **after** measures have been taken to mitigate hypoxemia and hypotension.
    - Manage seizures; be prepared for same if head injury is severe (see *Seizure Standard*).
    - Control external hemorrhage; stabilize an impaled object; cover protruding brain tissue with non-adherent material, e.g. plastic wrap; moist, sterile dressing.
    - If **CSF leak** is obvious or suspect, allow flow to continue unobstructed; place loose gauze over nostrils/external ear to absorb flow (CSF will diffuse across gauze faster than blood and will form a "halo" around the blood).
    - Apply a cold pack to swollen areas if practical.
    - Initiate rapid transport - decreased/decreasing level of consciousness; unequal/unreactive or sluggishly reactive pupils; obvious neurologic deficits; other "load and go" indicators.
2. **Enroute:** monitor; re-evaluate and manage as required; reassess vital signs, level of consciousness every 5 minutes and Glasgow Coma Score at 5-10 minute intervals for all CTAS 1 and 2 patients.

    Prepare for expected problems:

    - emesis (almost always);
    - problems related to concurrent injuries;
    - agitation, aggressive behaviour;
    - seizures;
    - decreasing level of consciousness;
    - respiratory distress/arrest.

If the patient is or becomes agitated:

- repeat the primary survey (plus pupillary assessment); manage critical findings;
- keep low light inside the patient compartment if it does not hinder proper patient care and monitoring;
- maintain a comfortable temperature for the patient in the patient compartment;
- if the patient's temperature appears elevated e.g. skin hot and wet or hot and dry, dispense with blanketing;
- restrain the patient if endangering self and/or crew.

Neck/Back Injury – Blunt, Penetrating

Assessments

1. Assume neck and spinal cord injury until assessment indicates otherwise - all patients involved in and/or suffering from:
    - contact/gymnastic sports accidents (impaction, falls);
    - diving and near-drowning accidents;
    - explosions, other types of forceful acceleration/deceleration injuries;
    - falls from a height;
    - loss of consciousness or decreased level of consciousness where spine injury is obvious, suspect or cannot be ruled out;
    - motor vehicle collisions;
    - penetrating neck/back trauma;
    - severe electrocution.

    And any trauma associated with:

    - complaints of neck or back pain or neurologic symptoms, e.g. numbness, tingling, burning, loss of feeling/function;
    - injuries to head, face, neck or back (obvious, suspect based on M. of I.);
    - tenderness on palpation over the spinous processes +/- associated instability, deformity or crepitus;
    - obvious neurologic deficits.
2. Assume vascular and airway lacerations/tears associated with penetrating neck injury.
3. Conduct a scene survey. Perform the primary survey while manually stabilizing the C-spine. If the patient requires extrication, perform the primary survey and necessary interventions prior to/during extrication whenever possible.

    Elicit incident history. Determine M. of I. Attempt to determine if:

    - the patient has neck or back pain or neurologic symptoms, e.g. numbness, tingling, burning, loss of feeling/function;
    - the patient was moved before paramedic arrival;
    - a paralysed patient had any movement before paramedic arrival;
    - there have been other changes in the patient's condition prior to paramedic arrival, e.g. behaviour, memory of events.

4. Make a transport decision:
   i) If the patient is "load and go" after the primary survey:
      - transfer the patient to a long backboard or adjustable break away stretcher;
      - completely immobilize the spine (including the head), pelvis and legs using appropriate techniques (see *Management Section*); blanket; initiate rapid transport;
      - continue assessment and management enroute.

   ii) If the patient is stable, transfer to a long backboard/adjustable break away stretcher and continue assessment at scene, situation permitting, or immobilize, transport and continue assessment enroute.

5. **Perform a head-to-toe secondary survey.** Ensure assessment includes:
   - **Neck and Back:** inspect, palpate for CLAP(S)(D), TIC(S)(D); inspect, palpate the neck posteriorly, and inspect/palpate the back **only if** the patient can be safely moved to do so, or examine during the log-roll maneuver (if performed);
   - **Sensory/Motor Exam** (light touch or pinch to the fingers/toes, dorsum of hands/feet; movement of fingers/toes, hands/feet - spontaneous or upon request);
   - **Pupillary Assessment**: size/equality/reactivity;
   - **Baseline Glasgow Coma Score;**
   - **Assess for other signs specific to spinal cord injury** if cord injury is obvious or suspect e.g. spinal shock; urinary retention (bladder may be palpable as a large mass in the abdomen); diaphragmatic breathing. Note priapism (sustained penile erection) if obvious.
   - **For all *penetrating neck wounds*:**
     - inspect and/or palpate for entry/exit wounds;
     - assess carefully for tracheal deviation, JVD; inspect the chest and auscultate for decreased air entry over one or both lung fields (possible pneumothorax, tension pneumothorax);
     - assess for signs of airway and/or vascular penetration - frothy/foamy bleeding, sucking wounds, gurgling/crackles/wheezes on chest auscultation, subcutaneous emphysema;
     - do not remove impaled objects in the neck unless it has caused an airway obstruction.
   - **For penetrating injuries below the neck, in the spinal area:**
     - inspect and/or palpate for entry/exit wounds during the log-roll maneuver; as for neck wounds: assess for signs of airway and/or vascular penetration; inspect and auscultate the chest;
     - inspect and palpate the abdomen.

6. Make a second transport decision if still at scene.

Management

I. Specific to all spinal injuries:

1. If indicated:
   - establish/improve the airway while stabilizing the C-spine - use a modified jaw thrust to open the airway; remove helmet to ensure airway access and/or neck stabilization;
   - assist ventilation;
   - administer high concentration oxygen;
   - initiate rapid transport.
2. Completely immobilize the neck, spine, pelvis, legs and head when spinal cord injury is obvious, suspect or cannot be ruled out.

   Immobilize in a safe, and orderly fashion:

   i) **Immobilize the cervical spine** with a rigid cervical collar; remove helmet (where applicable).
      - If the neck cannot be brought into neutral alignment with gentle manipulation, immobilize in the position found using rolled blankets, towels or other padding.

   ii) Immobilize the thoraco-lumbar spine, pelvis and legs utilizing a long backboard or adjustable break away stretcher and approved techniques and strapping:
      - Perform emergency rapid extrication if scene survey identifies a condition immediately endangering the victim and the paramedic, and/or the primary survey reveals a condition requiring immediate intervention that cannot be performed inside the vehicle;
      - Perform non-rapid extrication if the patient is assessed as stable/non critical;
      - If extrication is not required, simply transfer and secure the patient.

   iii) **Immobilize the head**; use tape, rolled towels/blankets or a head immobilization device; place padding behind/under the head if needed to maintain neutral C-spine alignment.

Guidelines

When possible, stabilize a fractured femur or tibia by securing it to the uninjured leg **prior to** transfer to a backboard/adjustable break away stretcher; if time and the patient's condition permits, splint further **before** transfer to the backboard/adjustable break away stretcher; if log-rolling, logroll onto the uninjured side.

Guidelines

Time and patient condition permitting, pad backboard/sides of adjustable break away stretcher to improve patient comfort, especially if the patient is too thin to fill out the board/adjustable break away stretcher. Pad under the back in children with large heads, if required. Remove hard objects from the patient's pockets.

3. Use the spinal immobilization extrication device to immobilize the neck, spine and head if:
    - sufficient trained personnel are available to apply it quickly;
    - the spinal immobilization extrication device is appropriate to the situation, e.g. long backboard or adjustable break away stretcher cannot be utilized due to size/shape of the area where the patient is located; board or adjustable break away stretcher has already been applied to another patient;
    - the spinal immobilization extrication device can be applied properly;
    - application will not compromise critical interventions.
4. If **spinal shock** is obvious/suspect, immobilize and:
    - administer high concentration oxygen;
    - blanket the patient as soon as possible;
    - initiate rapid transport.

II. Specific to penetrating neck wounds:

Stabilize an impaled object and control oral and wound hemorrhage:

- control oral hemorrhage (see *Facial and Nose Injury Standard, Management* section);
- if venous bleeding cannot be controlled with direct pressure, apply pressure above and below the point of injury;
- apply pressure over the carotid artery **only if** it is the wound site, and only over one carotid at a time (if both are injured);
- apply pressure lateral to, but not directly over the airway;
- apply occlusive dressings to wounds; use non-circumferential bandaging;
- if an impaled object prevents proper positioning of the patient for purposes of spinal immobilization, stabilize the object, slide the patient onto the backboard, and transport in the most stable position possible.

III. Manage other penetrating wounds as per the *Soft Tissue Injures Standard.*

IV. Enroute:

- keep patient movement to a minimum;
- tilt backboard/adjustable break away stretcher to the left side, i.e. facing the paramedic, if the patient has excessive secretions or if the patient is vomiting;
- keep the patient warm; maintain a comfortable temperature for the patient in the patient compartment;
- monitor; re-evaluate and manage as required: for all CTAS 1 and 2 patients, re-assess vital signs every 5 minutes; repeat Glasgow Coma Score as soon as transport is underway and every 5-10 minutes thereafter.

- **Prepare for expected problems:**
  - problems related to concurrent injuries; emesis;
  - seizures if disruption of cerebral blood flow or air embolism secondary to penetrating vascular injury in the neck and/or concurrent head injury;
  - hemorrhagic shock, shock due to pump failure (tension pneumothorax, cardiac tamponade, vascular injury if penetration into the chest from a penetrating neck wound);
  - spinal shock if cord injury is obvious/suspect;
  - airway compromise, respiratory distress/arrest if multiple trauma, airway/vascular penetrating injury to the neck and/or spinal cord injury.

Guideline

The attending paramedic should sit within the patient's view when possible, so the patient does not attempt to turn their head.

Guidelines

Helmet removal is almost always required to carry out proper assessment and management of injuries involving the airway, C-spine and head. Removal may also be required if the helmet is loose fitting and interfering with proper immobilization. Balance the need for removal against the possibility of causing or exacerbating injury. Use judgement.

If the patient is conscious, and able to assist in helmet removal, request his/her cooperation; if the patient is unable to physically assist, they may be able to assist verbally by supplying advice regarding the helmet design, methods of removal, etc.

Sexual Assault (Suspect)

Personal and Patient Safety and Protection

1. Ensure the patient is not left alone.
2. Request police assistance at the scene.

Assessments

1. Assume that serious or life threatening injuries have occurred in association with the assault.
2. Conduct a scene survey, determine mechanism of injury; perform the primary survey. Make a transport decision.
3. With respect to **history and secondary survey assessments:**
   i) Ensure privacy whenever possible. Move the patient to a quiet non-threatening environment. Provide a blanket for the patient to cover themself.
   ii) When possible, have the history and physical performed by a paramedic of the same gender as the patient.
   iii) Ask the patient if they wish to discuss the incident; if they do not, confine questioning to details of injuries received and activities occurring since the incident, in particular, bathing, voiding and changing clothes.
   iv) If the patient volunteers information regarding the assault, be supportive, non-judgemental and reassuring regarding the patient's handling of the situation.
   v) If the patient is a child, question the parent(s), guardian or other bystanders, **not** the child.
   vi) Wear gloves during all physical assessments.
   vii) Keep handling of the patient and clothing to a minimum. Explain what you are doing. Remove only as much clothing and examine only as much as is required to determine the extent of injuries, to assess bleeding sites, and to carry out necessary interventions.
   viii) Examine the perineal area only if on-going hemorrhage is obvious; inspect for bleeding sites and soft tissue injuries around the thighs, buttocks and abdomen. If the chest is examined, note soft tissue injuries around the breasts.
   ix) Leave scene evidence intact for the police.

Management

1. Manage primary survey critical findings and other serious injuries. Initiate rapid transport if indicated. Carefully bag and transport the patient's clothing with the patient.
2. Handle wounds as little as possible. Omit cleansing; dress wounds only if required for hemorrhage control; cover the perineum with a pad to absorb blood flow.

3. Advise the patient not to bathe, defecate, douche, void or change clothing unless absolutely necessary. Explain the need to preserve evidence.
4. Enroute - monitor, re-evaluate and manage as required; comfort and reassure as required; notify receiving staff of the nature of the incident.
5. On completion of the call, bag the stretcher linen, dressings, and other materials in contact with the patient, and leave at the receiving facility for attending police officer(s), along with the patient's clothing.
6. If transport is refused, encourage the patient to be examined by a physician and to report the incident to the police. Obtain appropriate documentation of refusal. If the patient is deemed incompetent to refuse, follow procedures as outlined in the *General Standard of Care, Section 1*.
7. Document all findings and procedures - everything that was seen and examined and all interventions that were performed. Be accurate and specific with respect to explanations and details (documentation is likely to be reviewed during subsequent medico-legal proceedings).

Guidelines

If the patient refuses to report the incident to the police, it is helpful to discuss options and be knowledgeable regarding local resources e.g. sexual assault crisis centre, crime victim assistance programs, etc., and be able to provide phone numbers for same.
A debriefing session for involved emergency personnel may also be warranted.

Soft Tissue Injuries (Wounds) – General Assessment and Management Standard

With respect to wound assessment and management, limit initial interventions to hemorrhage control, stabilization of impaled objects and assessment/restoration of neurovascular status. Other interventions such as cleansing, dressing, bandaging and splinting of minor injuries should be performed only if the patient is stable or has been stabilized, and time, resources permit.

See *Amputation/Avulsion Standard* for specific information on assessment and management of these injuries.

Assessments

1. Assume underlying injuries to deep structures - nerves, vessels, bones.
2. Prior to physical assessment:
    - **Apply disposable non-latex gloves, other PPE as required** to prevent exposure to spurting blood, blood splashes;
    - **Expose injured areas:** remove or cut away as much clothing and tight band jewelry as possible.
3. With respect to secondary survey assessments:
    - Assess distal neurovascular status;
    - Inspect for **CLAP(S)(D);** palpate for **TIC(S)(D)** over bones/joints;
    - Attempt to estimate degree of blood loss, e.g. rate of flow, colour, quantity;
    - **For penetrating injuries, perform additional assessments**:
        - inspect for multiple injury sites and exit site(s) if the patient can be safely moved;
        - note frothy bleeding indicating penetration of vascular structures, airway or esophagus.

Guidelines

If wound(s) were dressed prior to paramedics arrival, use judgement with respect to dressing removal. If first responder skills are known and trusted, and/or bleeding is controlled and distal pulse and colour are acceptable, leave dressing(s) intact.

Management

1. Administer high concentration oxygen if bleeding is severe or major blood loss is obvious/estimated.
2. **Control wound hemorrhage on a priority basis:**
    - apply direct pressure to bleeding sites e.g. with digital pressure, the hand, pressure dressings, and/or bandages;
    - attempt to calm and reassure the patient; keep patient movement to a minimum;
    - elevate affected part when practical; if bleeding appears related to a compound fracture, gently manipulate the extremity into as near normal anatomical alignment as possible;
    - change the first dressing if it becomes blood-soaked; reassess to see if pressure has been applied to the appropriate site;
    - if bleeding persists after the dressing change, apply additional dressings over the second dressing and/or tighten the bandage;
    - if bleeding persists, use pressure points where appropriate;
    - for persistent extremity bleeding, unresponsive to other measures, inflate a blood pressure cuff around the extremity directly over the dressings; inflate to minimum 40 mmHg; increase pressure until bleeding is controlled; ensure that the distal pulse remains intact; do not completely deflate once inflated; monitor cuff pressure and distal pulse; slowly adjust pressure up or down as required to manage recurrent bleeding or neurovascular compromise;
    - monitor for shock if bleeding is severe, uncontrolled.
3. **Stabilize an impaled object:**
    - Leave the object in place - **exception**: attempt removal if the object is through the cheek or obstructing the airway; if the object is in the chest and is directly interfering with the performance of CPR, attempt to change hand position;
    - If the object/patient will not fit into the ambulance, attempt to shorten the object or request assistance from other emergency services personnel at scene;
    - Manually stabilize the object during wound exposure, hemorrhage control and wound dressing;
    - Apply layers of bulky dressings around the object and bandage into place.
4. Cover **protruding tissue/organs** with non-adherent material, e.g. moist sterile dressings, plastic wrap.
5. Leave **embedded objects** in place.
6. In the stable/stabilized patient, **cleanse** wound surfaces if gross dirt, contaminants and large clots are visible. Attempt manual removal of large adherent surface contaminants. Irrigate animal/human bites for up to 5 minutes at scene if patient condition permits.

7. **Dress and bandage** bleeding or open wounds:
   - use materials carried on-board or other available clean materials;
   - use wet dressings if wounds are oozing, e.g. road burn;
   - dress digits separately; if not burned, leave tips of fingers/toes uncovered to allow observation of neurovascular status;
   - loosen or tighten bandages as required to restore/improve neurovascular status and control hemorrhage;
   - if a bandage is placed over a joint, advise the patient not to bend the joint.
8. **Splint** injured extremities if fracture/dislocation is obvious or suspect (see *Extremity Injury Standard*). Dress wounds prior to splint application.
9. **If possible/practical, elevate the affected part** and apply a cold pack for obvious/ anticipated swelling.
10. **Re-assess and monitor** distal circulation, skin colour and temperature after hemorrhage is controlled and dressing, bandaging and splinting is completed.

Guidelines

Be cautious when using cold packs. If neurovascular compromise appears related to deformity or vascular injury **rather than swelling,** then cold-induced vasoconstriction may worsen ischemia.

Section 4

Environment-Related Disorders

Unless otherwise specified, follow the *Trauma Format - Short Form of General Standard of Care* for most standards in this section.

For a list of abbreviations used in this section, see the *Key Code for Trauma Mnemonics and Short Forms.*

Bites – Animal/Human

See *Snake Bite Standard* if indicated.

Personal and Patient Safety and Protection

1. Move the patient out of the vicinity of the animal/assailant when deemed safe to do so on the basis of scene assessment and/or advice from other public safety personnel at scene.
2. Secure or have other public safety personnel secure the animal/assailant.

Assessments

1. Assume potentially serious, life/limb and/or function threats:
   - injuries to underlying organs, vessels, bone;
   - communicable disease transmission:
     - rabies (animal bites especially bats, skunks, racoons);
     - hepatitis B (human bites), HIV (human bites - low risk of transmission via saliva, but assailant may be at risk if victim is HIV positive);
     - bacterial contamination (especially human bites to the hand).
2. Conduct a scene survey. Determine M. of I.; perform the primary survey. Make a transport decision.
3. Elicit incident history; attempt to determine:
   - where applicable - animal type, species and location;
   - whether behaviour is abnormal, or if attack was unprovoked;
   - immunization and communicable disease status of animal/assailant/victim.
4. Perform secondary survey assessments: if isolated soft tissue injury(s) has occurred, follow *Soft Tissue Injuries Standard* and take vital signs.

   Perform additional assessments based on patient's history, condition and/or scene observations.

   Make a second transport decision if still at scene.

Management

1. On a priority basis, manage primary survey critical findings, major/multiple trauma and other identified problems, e.g. allergic reactions secondary to the bite. If indicated, administer high concentration oxygen and initiate rapid transport.
2. Manage amputation/avulsion (see *Amputation/Avulsion Standard*). Manage minor soft tissue injuries when the patient is stabilized (see *Soft Tissue Injuries Standard*).
3. Irrigate animal/human bites for up to 5 minutes at scene, if patient is stable.
4. **Enroute:** monitor, including neurovascular status in the affected extremity. Reassess every 5 minutes if neurovascular status was compromised on initial assessment; re-evaluate the patient and manage as required. Prepare for problems expected on the basis of working assessment.

Burns – Thermal

Also see Standards and Guidelines for *Electrocution/Electrical Injury, Inhalation Injury.*

Personal and Patient Safety and Protection

1. Ensure personal safety. Specifically:
   - Request assistance from fire personnel at scene prior to attempting patient contact in a smoke/fume filled environment.
   - Where smoke/fumes are involved, especially in an enclosed space, ensure that the patient is moved as quickly as possible to a fresh air zone.
   - If the M. of I. suggests the possibility of trauma, stabilize the patient's neck and back prior to extrication.

Assessments

1. Assume life/limb/function threats:
   - **severe burns (with potential for burn shock);**
   - **smoke inhalation, upper airway burns - all victims exposed to fire/smoke in an enclosed space, unconscious when exposed and/or complaining of chest pain after exposure;**
   - **carbon monoxide poisoning - all victims exposed to fire in an enclosed space;**
   - **lower airway burns - if steam inhaled, or victim(s) unconscious during steam exposure;**
   - **concurrent injuries: fires associated with explosions, fires where victims attempted to escape, fires where falls/trauma may be possible.**
2. Conduct a scene survey; determine M. of I.; perform the primary survey. Make a transport decision.
3. Elicit incident history - specifically attempt to determine:
   - cause of fire; and whether an explosion occurred;
   - if fire occurred in an enclosed space;
   - if the victim was unconscious or lost consciousness during exposure to fire/fumes/smoke;
   - when the incident occurred and treatment prior to ambulance arrival;
   - patient's previous health status and medication history.

4. Perform secondary survey physical assessments:

   Specific to burns:

   i) Estimate severity:
      - percentage of body surface area burned;
      - burn depth (degree);
      - areas burned.

   ii) Assess distal neurovascular status in burned extremities.

   iii) Assess for **signs of smoke inhalation and upper airway injury** if suspect on the basis of scene survey/mechanism of injury; specifically assess/look for:
      - smoky breath odour; burns to lips or mouth;
      - facial burns, burned or singed nasal hair or eyebrows;
      - carbon particles (soot) in the saliva or sputum;
      - cough, drooling, stridor, hoarseness;
      - shortness of breath, shallow respirations, tachypnea, audible wheezes;
      - decreased air entry, wheezes, crackles on chest auscultation.

   iv) For burns involving the eyes (thermal, radiation [arc welder flash, snow blindness]), determine if vision is decreased/blurred. Limit assessments to inspection; inspect sclera and cornea if patient is able to open the eyelids. **Do not** force the eyelids open.

   v) Take vital signs. Obtain baseline Glasgow Coma Score if level of consciousness is altered or decreased, or if exposure to carbon monoxide, noxious gases/fumes is known/likely to have occurred.

   vi) Perform other assessments as indicated on the basis of scene survey, history and primary survey.
   Make a second transport decision if still at scene.

Management

1. Manage primary survey critical findings and other concurrent major/multiple injuries, including airway burns, on a priority basis, as per the *General Standard of Care - Trauma Format* and specific trauma standards.

2. **Specific to burns:** initiate management as soon as possible after patient contact. Implement measures to prevent further injury and relieve pain:

   i) Stop the burning process:
      - extinguish flaming clothing/skin - wet down, smother;
      - attempt removal of smouldering clothing, hot metal, rings or other tight bands from affected areas;
      - cut around clothing which is adherent to skin.

ii) Administer high concentration humidified oxygen - all noxious gas inhalations, upper airway burns (obvious, suspect). In the case of facial burns, gauze pads may be placed under the edges of the oxygen mask to decrease pain and irritation.

iii) Follow the appropriate Medical Directive in accordance with *ALS Patient Care Standards.*

iv) For 1st degree burns, or 2nd degree burns <10-15%, cover with wet, sterile dressings or a clean wet sheet; cover more extensive 2nd degree burns and all 3rd degree burns with a dry, clean sheet (sterile if available), once the burning process has been stopped.

v) Elevate the affected part when practical. Keep the patient warm.

iv) If burn dressing is undertaken - leave blisters intact; dress digits individually.

vii) Cover affected eye(s) with moist dressings.

viii) Initiate rapid transport if indicated.

Guidelines

Cooling of burns which are more extensive than 10-15% 2nd degree may result in hypothermia. If cooling is undertaken, use wet (not soaked) dressings and cover with dry dressings to reduce general body heat loss, especially in children. If shivering or hypotension develops, discontinue cooling efforts. In this setting (>10-15% 2nd degree burns), wet dressings are generally well tolerated without adverse effects for short transport times, e.g. 30 minutes or less.

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3. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
   - problems related to concurrent injuries;
   - emesis;
   - seizures, combative behaviour, decline in level of consciousness (if there has been carbon monoxide or other noxious gas exposure or associated major trauma);
   - hypotension, shock (major burns, or lesser burns in children and debilitated patients);
   - airway obstruction, respiratory distress/arrest (burns to head, face, neck and/or chest; inhalation injury).

Chemical Injury – Eye/Skin

If scene survey indicates there are multiple patients (>5), follow procedures as outlined in *Hazardous Materials Exposure - Assessment and Management Guidelines* in this manual.

Assessments

1. Assume life/function threats:
   - **vision loss (chemical in eye);**
   - **burns (chemical, thermal);**
   - **systemic toxicity secondary to chemical absorption through the skin (if the patient complains of weakness, headache, dizziness, shortness of breath, burning [irritation of eyes, nose, throat and/or chest]).**
2. Ensure personal safety and protection (see *General Standard of Care, Section A*). If scene survey and/or other information suggests release of, or exposure to a chemical which is dangerous or potentially so, and/or an exposure which is deemed beyond the ability of a paramedic to manage, contact fire personnel and/or other appropriate personnel to perform decontamination procedures.
3. Perform the primary survey. Elicit incident history. Determine the type and concentration of chemical. Use, or request other individuals/emergency services personnel at scene to use available resources as applicable:
   - bystanders, other company employees at scene;
   - dangerous goods placard or product code number;
   - Material Safety Data Sheet from WHMIS (Workplace Hazardous Materials Information System);
   - CANUTEC (Canadian Transport Emergency Centre);
   - Current Emergency Response Guidebook;
   - local utility company;
   - fire personnel;
   - poison control centre;
   - ambulance dispatch (if a list of local assistance agencies has been compiled and maintained at the local dispatch centre).
4. Make a transport decision.

Guidelines

If the patient is "load and go" after the primary survey, use judgement. If the "load and go" situation is due to the chemical exposure, consider on-scene irrigation for up to 10 minutes; at minimum, as much contaminated clothing, shoes, etc. as possible, should be removed prior to departure. Continue irrigation enroute, if practical and indicated based on the type of exposure and the nature of the chemical.

If information on the chemical is unavailable prior to transport, request contact personnel to call receiving hospital staff when information is available.

If available, and practical/safe to do so, collect the chemical container for transport, or transport the Material Safety Data Sheet to the receiving facility.

5. Perform minimum secondary survey physical assessments specific to chemical exposure:
   - **i) eye:**
     - affected eye(s), orbit(s) and facial area - inspect for redness, swelling, tearing, burns, corneal opacity;
     - question the patient regarding loss or distortion of vision.
   - **ii) skin:** assess injury site(s) for:
     - skin colour, condition;
     - burns: estimate degree and percentage of **surface** burns;
     - distal neurovascular status in extremity exposures.
   - **iii) if systemic absorption is suspect:**
     - **chest:** inspect, auscultate;
     - obtain **baseline Glasgow Coma Score;**
     - vital signs.

   Make a second transport decision if still at scene.

Management

1. After arriving at scene, **initiate or direct other public safety personnel to initiate irrigation as soon as possible, optimally concurrent with the primary survey,** and regardless of whether the agent has been identified. **Direct management towards reducing chemical activity, injury severity and pain.**

2. Apply disposable non-latex gloves, and other PPE as deemed necessary for personal protection, (or as advised by public safety agencies at scene).

3. **Prior to irrigation:**
   - brush off or manually remove solid, powdered chemical particles;
   - remove/have patient remove contact lenses (for eye exposures);
   - remove as much clothing, shoes, socks, jewelry as possible from affected areas (or remove during the first 5 minutes of irrigation).

4. With respect to **skin irrigation**:
   - use large volumes of water, e.g. hose, shower - **exception:** chemicals known to be water-reactive; use cool, not cold water; contain rinse water, if possible;
   - for water-reactive chemicals, follow the first aid procedures outlined in the current Emergency Response Guidebook for specific chemicals.
   - if an alkali burn is known/suspect, irrigate for a minimum of 20 minutes at scene, then continue irrigation enroute as long as irrigant is available and irrigation can be reasonably performed;
   - for a known acid burn - irrigate for at least 10 minutes at scene;
   - for unknown chemical exposures - irrigate for at least 20 minutes at scene;
   - if solid particles remain stuck to the skin after irrigation is completed, attempt manual removal, then cover affected areas with wet towels/dressings enroute or submerge in water - **exception:** 2nd or higher degree burns covering >10-15% of the body surface area - cover with a dry sterile sheet, or alternately a damp sheet topped by a dry sheet.
5. With respect to **eye irrigation:**
   - advise the patient not to rub the eye(s);
   - position patient, affected side down if one eye is affected, supine if both eyes are affected; hold eyelids open manually if necessary;
   - use large volumes of tap water, sterile water or saline;
   - irrigate away from tear duct(s);
   - utilize or request assistance in utilizing eye wash station/equipment if available at scene;
   - for alkalis - irrigate for at least 20 minutes; for acids - at least 10 minutes; for unknown chemicals - at least 20 minutes;
   - cover affected eye(s) enroute unless irrigation is continued enroute.
6. Transport all patients with chemical injuries, even minor injuries. Enroute: monitor, re-evaluate and manage as required; prepare for expected problems:
   - emesis;
   - increasing pain;
   - respiratory distress, confusion, agitation (if suspect systemic chemical absorption).

7. Isolate, label and dispose of contaminated equipment/supplies:
   - Bag all items; double bagging is advisable. Label "hazardous waste". The paramedic who has bagged the materials should also write their name on the label.
   - Leave bag(s) of contaminated items at scene. Transport to the receiving facility for disposal only if the facility is known to be capable of disposing of the materials. If necessary, seek advice from expert personnel at scene. Notify, or have dispatch notify the lead agency responsible for the containment/decontamination of hazardous materials of any contaminated materials left at the scene.

Post-call Procedures

1. Undergo personal decontamination as required. Refrain from eating or drinking until decontamination is completed.
2. Decontaminate the vehicle. Keep the vehicle and equipment out of service until decontamination is completed.

Cold Injury – Frostbite, Hypothermia

Personal and Patient Safety and Protection

1. Remove the patient from the cold as soon as possible. Ensure personal safety. If the patient is trapped, prevent additional heat loss, e.g. cover with a blanket or clothing; cover the head; put a blanket between the patient and the ground; plug holes in wreckage.
2. Handle the patient and/or the affected part(s) gently.

Assessments

1. Assume life/limb/function threats:
   - **severe hypothermia, frostbite;**
   - **concurrent trauma;**
   - **near-drowning, if cold injury is secondary to water immersion or submersion;**
   - **underlying disorders/precipitating factors,** e.g. alcohol/drug ingestion (especially barbiturates, other sedatives), hypoglycemia, trauma.
2. Conduct a scene survey, determine the M. of I.

   Note evidence of possible cause, e.g. empty medication containers, alcohol bottles. Note whether the patient is clothed, and type (heavy, light) and condition (wet, dry) of clothing.
3. Perform the primary survey - ensure C-spine control if spine injury is obvious, suspect or cannot be ruled out. Check for pulse and respirations for 45 seconds if severe hypothermia is obvious/suspect.
4. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
5. Elicit incident history - attempt to determine:
   - duration of exposure; type of exposure (wet, dry, both);
   - approximate air and/or water temperature, wind chill;
   - if re-warming was attempted prior to ambulance arrival and the patient's response;
   - the patient's previous health status and medication history.
6. Perform a **head-to-toe secondary survey.**
   - Only expose areas that are being examined; cover the area as soon as assessment is completed;
   - Attempt to determine the severity of hypothermia;
   - Attempt to determine the severity of frostbite where applicable, e.g. mild blanching of skin (frostnip); skin waxy/white, supple (superficial frostbite); skin cold, hard and wooden (deep frostbite).

   Make a second transport decision if still at scene.

Guideline

In the alert patient complaining of frostbite, assessment may be limited to examination of the affected part(s) and vital signs assessment if other injury, illness can be ruled out on the basis of history, scene observations and primary survey findings.

Guidelines

Recall that the **presence or absence of shivering** is an important indicator of the severity of hypothermia. If shivering is minimal or absent and level of consciousness is decreased or mental status is markedly altered, assume core temperature is below 32°C.

Management

1. Manage primary survey critical findings, other concurrent major/multiple injuries as per *Standards of Care*. Handle the patient gently.
2. Specific to **hypothermia**: protect the patient, prevent further heat loss and institute passive re-warming using appropriate interventions:
   i) **General measures for cold injuries (mild to moderate hypothermia):**
   Passive Re-warming
      - Remove the patient from the cold and blanket (including the head) as soon as possible (use a foil rescue blanket, if available) - ensure C-spine protection if injury is obvious, suspect or cannot be ruled out.
      - Attempt to remove wet or constrictive clothing, including shoes and jewellery; if frozen to the skin, leave until thawing occurs; wrap body/affected parts in blankets or foil rescue blanket.
      - Maintain a comfortable temperature in the patient compartment of the ambulance, i.e. at or just above room temperature (overheating may shunt cold, acidotic blood from the extremities to the core, possibly leading to cardiac dysrhythmias, cardiac arrest).

   Active Re-warming
      - Provide external re-warming as available, e.g. hot packs, hot water bottles, heating pads to the axillae, groin, neck and head; provide slow and gentle re-warming especially if transport time is prolonged i.e. >30 minutes.

ii) **In cases of *severe hypothermia*, i.e. an unconscious patient with cold, stiff body limbs, no shivering, pulse and respirations slow/absent and no other signs of "obvious" death:**

- Handle the victim as gently as possible.
- If no pulse or respirations are detected after assessing for 45-60 seconds, initiate appropritae SAED protocols in accordance with *ALS Patient Care Standards*.

- If no or inadequate respirations are detected but a pulse is detectable, begin assisted ventilation **without** compressions and initiate rapid transport.
- Do not perform vigorous or excessive suctioning and airway manipulation (may trigger ventricular fibrillation).
- Administer/ventilate using high concentration humidified oxygen. Protect the oxygen cylinder from the cold whenever possible.
- Employ passive re-warming measures (as outlined under *2i*); do not perform active re-warming (may shunt cold, acidotic blood from extremities to the core possibly leading to cardiac dysrhythmias, cardiac standstill).

Guideline

Some oxygen warming may be achieved by wrapping oxygen tubing around a hot pack, or placing the tubing between two hot packs.

3. **Manage frostbite.** Employ general measures as per Management of hypothermia outlined in *point 2*, and initiate passive re-warming of the affected part:
   - cover and protect the part;
   - do not rub or massage the skin;
   - leave blisters intact;
   - bandage digits separately;
   - elevate and splint an affected extremity.

Guideline

If transport is delayed or transport time is prolonged, consider contacting the receiving/base hospital physician for advice regarding active re-warming.

4. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems:
   - emesis;
   - problems related to concurrent injury, illness;
   - respiratory, cardiac arrest (if severe hypothermia).

Drowning and Near-Drowning

Personal and Patient Safety and Protection

1. Request appropriate public safety personnel to carry out rescue operations if required.
2. A paramedic will not participate in water or other types of rescue operations unless sanctioned by the paramedic's ambulance service operator.

Assessments

1. Assume life/limb/function threats:
    - **asphyxia, aspiration, pulmonary edema**;
    - **hypothermia;**
    - **scuba-diving related disorders where applicable**, e.g. decompression sickness, air embolism;
    - **concurrent trauma;**
    - **underling disorders which may have precipitated events**, e.g. drug or alcohol consumption, hypoglycemia, cardiac dysrhythmia.
2. Conduct a scene survey, determine the M. of I.
3. Perform the primary survey - manually stabilize the C-spine if spine injury is obvious, suspect or cannot be ruled out.
4. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).

    Make a transport decision.
5. Elicit incident history - attempt to ascertain water temperature and duration of submersion.

Note:

- if the water contains known or obvious chemicals, pollutants or other debris;
- whether the water is fresh or salt water;
- if the accident is related to diving.

6. Perform a head-to-toe secondary survey. If hypothermia is obvious/likely, only uncover areas being examined; recover the area as soon as assessment is done.

    Make a second transport decision if still at scene.

Management

1. Initiate rapid transport if indicated. Do not attempt resuscitation if death is "obvious".
2. Specific to **near-drowning**: as early as possible institute oxygenation, ventilation and initiate appropriate SAED protocols in accordance with *ALS Patient Care Standards*.
    i) **If the patient is still in the water:**
        - ensure that the patient is removed from the water as soon as possible; assess and manage ABCs;
        - stabilize the C-spine prior to removal; maintain C-spine alignment manually, while floating the patient onto a long backboard.

    ii) Reserve obstructed airway maneuvers for cases of airway obstruction unrelieved by all other maneuvers - use chest thrusts; manually remove and/or suction water and debris from the oro/nasopharynx if neck injury is suspect - do not turn the head to the side.

    iii) Administer high concentration, humidified oxygen. Warm the oxygen if transport time is >15 minutes and if a warming device is available (for quick warming, oxygen tubing can be wrapped around a hot pack, or tubing can be placed between two hot packs).

    iv) As soon as feasible, immobilize the head/neck/spine if spine injury is obvious, suspect or cannot be ruled out.

    v) If cold water drowning or submersion hypothermia is obvious/suspect:
        - Handle the patient gently.
        - Check for pulse and respirations for 45 seconds; if the patient is vital signs absent (VSA), immediately initiate appropriate SAED protocols and rapid transport.
        - Initiate re-warming procedures (as per the *Management section, Cold Injury Standard*).

    Guidelines

    If the patient has been submerged in cold water (<20°C) for >60 minutes, contact the base hospital physician for advice regarding continuation of resuscitation efforts. If this is not possible, attempt resuscitation as indicated above.

3. Manage concurrent injuries, scuba-diving related disorders and other identified problems amenable to field treatment.
4. Transport all near-drowning victims, even those who are asymptomatic (delayed pulmonary complications and death may occur).
5. Elevate the head of the backboard 30 degrees if level of consciousness is decreased. As required, tilt backboard to the left side to assist drainage of oral secretions and water. If near-drowning is related to a scuba-diving incident, see *Scuba Diving Injuries/Disorders Standard* regarding patient positioning.

6. Enroute: monitor; re-evaluate and manage as required. Prepare for expected problems based on working assessment:
   - other problems related to concurrent injuries/medical disorders;
   - emesis;
   - seizures;
   - agitation, aggressive behaviour, decrease in level of consciousness;
   - respiratory distress;
   - respiratory, cardiac arrest.

Electrocution/Electrical Injury

Personal and Patient Safety and Protection

1. Make no attempt to approach or touch a patient who is still in contact with an energized source. Turn off the power source if the source is obvious and easily accessible, or request power/utility/local electrical company personnel to turn off the source.
2. Make no attempt to approach or handle wires, metals or other conductive materials that are in contact with an energized power source (wet or damp ground will conduct electricity several metres away from the source).
3. Patients struck by lightning can be safely moved and examined without fear of electrocution unless the patient is in contact with an energized source which has also been hit by lightning.

Assessments

1. Assume life/limb/function threats:
   - **cardiac arrest/dysrhythmias;**
   - **seizures, other neurologic deficits;**
   - **extremity neurovascular compromise;**
   - **significant internal tissue damage (nerves, vessels);**
   - **multiple and/or severe trauma, especially fractures and/or dislocations.**
2. Conduct a scene survey, determine the M. of I.; perform the primary survey - manually stabilize the C-spine in all cases of significant electrical injury (as per *Assessments, Point 4*) and others if injury is suspect or cannot be ruled out. Make a transport decision.
3. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).

Guidelines

Victims of high voltage electric shock may appear dead, with fixed dilated pupils and stiffening from muscle contractions. Unless other signs of rigor mortis or obvious death are present, initiate CPR.

The major cause of death is asystolic cardiac arrest induced by high voltage current. With early CPR and adequate airway management, arrest can be successfully reversed.

4. Elicit incident history - attempt to ascertain the voltage and type of current (AC, DC).

5. Perform a head-to-toe secondary survey, including assessment for **signs of significant electrical injury:**
   - weak, irregular pulse;
   - cold, mottled, pulseless extremities;
   - shallow, irregular breathing;
   - neurologic impairment - confusion, disorientation, convulsions, sensory loss, paralysis - check pupils, obtain baseline Glasgow Coma Score;
   - burns;
   - entry/exit wounds; general wound assessment, including distal neurovascular status;
   - muscle spasms (usually tetanic - continuous waves);
   - smouldering shoes, belts, other clothing.

   Make a second transport decision if still at scene.

Management

1. In all patients assessed as having significant electrical injury:
   - immobilize the neck and spine;
   - administer high concentration oxygen;
   - attempt to remove smouldering clothing, shoes, etc. if the patient's condition and resources permit;
   - initiate rapid transport.
2. Manage burns, concurrent injuries, seizures and other identified problems which are amenable to field treatment.
3. If there are multiple victims as a result of a lightning strike, focus efforts on victims who are VSA.
4. Transport all electrical injury patients for in-hospital assessment (the degree of internal injury cannot be assessed in the field).
5. Enroute: monitor (including distal neurovascular status); reassess vital signs and distal neurovascular status every 5-10 minutes for all patients with significant electrical injury; re-evaluate and manage as required. If a significant electrical injury is obvious/suspect, expect:
   - emesis;
   - seizures, development of neurologic deficits;
   - extremity neurovascular compromise;
   - cardiac arrest, dysrhythmias.

Hazardous Materials Exposure – Assessment and Management Guidelines

These guidelines apply to major incidents involving radioactive materials, chemicals or other hazardous materials spills, explosions or leakages, i.e. incidents involving a wide geographic area and/or a public site or access route, and likely to affect multiple patients (5 or more).

Personal and Patient Safety and Protection

1. Assume the release of a hazardous material. Do not approach the scene.
2. Park the vehicle uphill and upwind of the incident whenever possible. Position the vehicle facing the scene (to facilitate proper scene survey).
3. Perform a scene survey:
   - Attempt to determine the type and nature of the incident and the number of potential patients.
   - Request police and fire personnel to the scene if not already present. Seek specialized assistance as deemed necessary, e.g. CANUTEC, local utility company.
   - Limit site entry to essential emergency response personnel; establish a perimeter (police and fire personnel will carry out these activities if they are at the scene).
   - Make no attempt to approach or handle damaged containers, packages or spilled materials if radioactivity is known or suspect, smoke/fume leakage is obvious, or if doubt exists regarding personal safety.
4. Attempt to identify the hazardous material prior to approaching the patient(s). Utilize, or request other individuals/emergency services personnel at scene to utilize available resources as required to identify the material:
   - bystanders, other company employees at scene;
   - dangerous goods placard or product code number;
   - Material Safety Data Sheet (from WHMIS - Workplace Hazardous Materials Information System);
   - CANUTEC (Canadian Transport Emergency Centre);
   - current *Emergency Response Guidebook*;
   - local utility company;
   - fire personnel;
   - poison control centre;
   - ambulance dispatch (if they have a list of local assistance agencies compiled and maintained at the dispatch centre);
   - medical control, i.e. base hospital.

Note: Only one agency should communicate with CANUTEC. Whenever possible, this should be the lead agency on scene, usually the fire department. When possible, communication with CANUTEC should be conducted by FAX. Once an information fax is received from CANUTEC regarding the material involved, the fax should be photocopied and issued to all agencies working at the incident site.

5. Assess the risks of entering the site and assessing and moving the patient(s) - consider the protective gear available and the hazardous materials present. Enter the site and remove patient(s) only if:
   - the hazardous material has been identified, **and,**
   - qualified site personnel indicate it is safe to enter the site.

Note: If expert advice, personnel or resources are unavailable, a paramedic may still decide to enter the site. This decision should take into consideration the numbers of victims and severity of injuries, the likelihood of personal contamination and danger, as well as the paramedic's past training and experience in dealing with hazardous materials.

6. If/when the site is entered:
   i) Initiate *Multiple Casualty Incident Principles* if there are multiple patients.
   ii) Minimize external and internal contamination risk to yourself and to the patient(s):

   External Exposure
   - Keep patient approach, movement and treatment areas uphill and upwind of the incident site whenever possible. If there is a known radiation hazard, stay 50 metres upwind.
   - Evacuate the patient(s) as quickly as possible. Be alert for fire or explosion.
   - If dealing with **radioactive materials:**
     - limit site entry to the shortest possible time;
     - maximize the distance between a radioactive source and one's self and the patient(s); maximize the use of shielding materials, e.g. use a wall, door or metal sheeting, and/or cover the source with sand, dirt, bricks or other dense materials.

Note: In most instances shielding will be performed by qualified personnel at the scene.

Internal Exposure
- Utilize appropriate PPE (as carried on board) and/or protective gear as provided/ instructed by expert site personnel.

Assessments

1. If there are multiple patients, follow appropriate procedures for triage, treatment and transfer from the incident site. (See *Management and Transport Sections* in these guidelines.)

   Assume that all patient(s) have injuries secondary to or concurrent with hazardous material exposure.

2. Utilize appropriate PPE to prevent secondary contamination.
3. Perform the primary survey; manage critical findings.
4. Elicit incident history - attempt to ascertain details of exposure if not already known:
    - duration;
    - type and degree of contamination, e.g. external, internal (includes contamination of open wounds), whole body exposure or exposure of specific parts;
    - associated events, e.g. explosion, fire;
    - treatment prior to ambulance arrival; response to treatment.
5. Perform a **head-to-toe** secondary survey.
6. Make transport decisions on the basis of "load and go" indications after the primary and secondary survey, or if there are multiple patients, on the basis of triage categories.

Management

1. If there are multiple patients and the fire department is capable, request fire personnel to perform gross decontamination for chemical and radiation exposures.
    - Begin (or request) removal of chemicals from the patient(s) as soon after arrival at scene as possible. Do not wait for specific chemical identification to begin dilution and removal procedures. See *Chemical Injury - Eye/Skin Standard - Management Section.*
    - In cases of obvious or potential exposure to radioactive material, await identification of the material before approaching the patient.
    - In cases of **identified low level radiation exposure,** e.g. tritiated water, **manage critical injuries/illness prior to gross decontamination.**
    - In cases of identified high level radiation exposure, decontamination of patients should be performed by qualified site personnel **prior to assessment and management by paramedic crews.**
2. **Specific to decontamination (if performed by paramedic crews):**

    i) **For chemical exposures** - manage as outlined in the *Chemical Injury - Eye/Skin Standard.*

    ii) **For low level radiation exposures:**

    Unstable Patients:

    - Remove contaminated clothing (as much as is safe and practical to remove).
    - Double blanket with regular or foil rescue blankets; cover the head.

    Stable Patients:

    - Attempt to remove all contaminated clothing, shoes and jewelry.
    - Cover open wounds with sterile dressings.
    - Double blanket/wrap the patient; cover the head.

    If expert site personnel are available at scene, consider asking patients who are ambulatory and assessed as requiring no or delayed treatment and transport, to remain at scene for a contamination check and decontamination if required.

3. Isolate, label and dispose of contaminated equipment/supplies:
   - Bag all items; label "radioactive waste" or "hazardous waste" as applicable; double bagging is advisable; the paramedic who has bagged the materials should also write their name on the label.
   - Leave bag(s) of contaminated items at scene; transport to the receiving facility for disposal only if the facility is known to be capable of disposing of the materials. Seek advice from expert personnel if available. Notify, or have dispatch notify the lead agency responsible for the containment/decontamination of hazardous materials of any contaminated materials left at the scene.

Transport

1. Attempt to minimize and contain contamination of the vehicle and equipment (prior to loading the patient(s) where feasible):
   - close and/or zip equipment bags and carrying cases;
   - store all equipment not in use;
   - keep cupboards and drawers closed until needed;
   - use only equipment and supplies deemed necessary for proper patient care enroute;
   - turn exhaust fans on high;
   - if available and time/patient's condition permits, cover the stretcher and floor of the ambulance with clean sheets or blankets.
2. If there are multiple patients:
   - **For chemical exposures,** transport on the basis of severity of burns and/or systemic reactions and associated trauma, after decontamination procedures have been carried out.
   - **For radioactive materials exposure**, transport on the basis of injury severity, not on the basis of degree of contamination. If severity of injuries and triage categories are equivalent, transport decontaminated patients first.
   - Utilize as few vehicles as possible to reduce spread of contamination, e.g. make multiple trips; if transporting two or more patients at the same time, transport contaminated patients together whenever possible.
3. Transport to facilities as specified in provincial and/or local emergency response plans. Ensure that the receiving facility is advised prior to transport of patients.
4. Enroute - monitor, re-evaluate and manage as required; prepare for problems expected on the basis of working assessment. Advise dispatch regarding:
   - number of patients being transported;
   - nature of injury/illness;
   - type and extent of contamination (if known);
   - brief description of treatment and decontamination procedures performed;
   - priority code, destination, and ETA.

Contact, or have dispatch contact the receiving facility to ascertain whether a special entrance has been designated to receive contaminated patients.

Post-call Procedures

1. Undergo personal decontamination as required. Refrain from eating or drinking until decontamination has been completed.
2. Keep the vehicle and equipment out of service until it has been completely checked for contamination, and decontamination procedures have been completed.
3. Whenever possible, participate in an incident termination session (debriefing plus post incident analysis and critique). If mutual aid agreements have been developed, this session should be conducted in conjunction with the other public safety personnel involved in handling the incident.

Guidelines

In the event that an ambulance crew is confronted with a hazardous material situation and no other trained personnel are immediately on hand to control the scene and the crowd, the following guidelines may be useful.

In all other circumstances, evacuation should be left to other trained personnel at the scene.

1. Stay upwind and uphill of any leak, spill, release or fire involving hazardous materials. Do not enter a scene that is known to contain a hazardous substance release or fire, or a scene that is known to be directly adjacent to same.
2. If scene survey and/or other information indicates the presence of smoke, fumes or other respiratory toxins, request dispatch to send the local fire department.
3. Do not attempt a downhill or downwind evacuation without the appropriate level of respiratory protection and protective clothing. If there are no alternatives to downhill or downwind evacuation, consider using the public address system on the ambulance to warn the public to evacuate.
4. If there is a large container of an unidentified hazardous material involved in a spill or fire, consider initial evacuation for 500 meters in all directions.
5. For explosives, evacuate up to 500 meters in all directions if <5000 kg is involved, 1000 meters if >5000 kg.
6. For flammable gases, liquids and solids, 500 meters downwind (800 meters if gas is highly flammable) for large spills; 1000 meters if a large container (railroad or tanker car) is involved in a fire (1500 meters if gas is highly flammable).
7. For radioactive materials, evacuate up to 800 meters in all directions.

For more specific directions, refer to the current *Emergency Response Guidebook*.

Heat-Related Illness

Consider this condition in the setting of hot and/or humid outdoor or indoor conditions with chief complaint(s) or presenting problem(s) of:

i) fainting, near fainting **(heat syncope);**

ii) severe cramping of large muscle groups (usually leg muscles) after heavy exertion and sweating **(heat cramps);**

iii) non-specific complaints: headache, giddiness, nausea, vomiting, malaise, associated with excessive sweating in healthy adults, or hot, dry skin in the elderly; fever with or without mild alterations in mental status (slight confusion, irritability, poor judgement) **(heat exhaustion);**

iv) non-specific complaints, severely altered mental status (bizarre behaviour, psychosis, disorientation), coma, seizures **(heat stroke).**

Also consider heat stroke in association with overdoses of tricyclic anti-depressants, antihistamines and β-blockers, as well as cocaine and amphetamine abuse.

- Follow the *Medical Format - Short Form of General Standard of Care* in conjunction with the procedures outlined in this standard.

Assessments

1. Assume the potential for life threats:
    - **heat stroke;**
    - **hypovolemic shock.**
2. Conduct a scene survey. Perform the primary survey. Make a transport decision.
3. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
4. Elicit incident history; perform secondary survey physical assessments - **head-to-toe survey if heat stroke is suspect.** Otherwise, perform minimum secondary survey assessments as follows:
    - **Central nervous system -** baseline Glasgow Coma Score, pupillary size, equality, reactivity;
    - **Mouth/skin -** inspect for signs of dehydration; assess skin temperature, colour, condition (wet/dry);
    - **Extremities -** inspect, palpate if the patient is complaining of muscle cramping;
    - **Vital signs.**

    Make a second transport decision if still at scene.

Management

1. **Specific to heat illness** - initiate cooling and re-hydration procedures as soon as heat illness is suspected:

   i) **General measures:**
   - move the patient to a cooler environment;
   - position the patient supine if syncope has occurred, the patient is hypotensive, or other signs of shock are evident;
   - remove heavy, or excess layers of clothing; massage cramped muscles (if tolerated);
   - if available at scene or from bystanders, provide salt-containing fluids in small quantities if the patient is conscious, cooperative, able to understand directions and is not vomiting or nauseated, e.g. sips of water with salt added (1 teaspoon of salt to 1 litre of water), other commercial electrolyte replacement beverages.

   ii) **If working assessment is *heat exhaustion*:**
   - perform *General Measures* as per *point i)*; administer high concentration oxygen;
   - implement additional rapid cooling measures if temperature seems very high:
     - move the patient to the ambulance; remove as much clothing as possible; turn air conditioning on high; cover the patient with wet sheets; if possible, keep the sheets wet throughout transport;
     - massage the extremities to increase vasodilatation and prevent shivering;
     - transport minimum return priority Code 3.

   iii) **If working assessment is *heat stroke*:**
   - administer high concentration oxygen and initiate rapid transport;
   - initiate immediate rapid cooling measures as per *point ii) heat exhaustion,* plus:
     - withhold oral fluids;
     - apply cold packs to the axillae, groin, neck and head;
     - restrain the patient if combative; use only the minimum force required to protect the patient from harming themself or others.

2. Manage associated seizures and other identified problems amenable to field treatment.

3. Enroute: continue re-hydration and/or cooling procedures; monitor, re-evaluate and manage as required; prepare for expected problems:
   - emesis;
   - shock (heat exhaustion/stroke);
   - seizures, violent behaviour, agitation, coma, cardiac arrest (heat stroke).

Guideline

If transport time is prolonged (30 minutes or more), continually re-assess the patient to determine if cooling procedures should be discontinued, e.g. skin temperature feels normal to touch, and/or generalized shivering develops, and/or the patient's level of consciousness improves/mental status normalizes.

Inhalation Injury – Smoke, Steam, Fumes, Other Noxious Gases

See *Burns Standard and/or Standard for Shortness of Breath, Breathing Difficulty,* in conjunction with the procedures outlined in this standard.

Personal and Patient Safety and Precaution

1. Ensure personal safety and protection (see *General Standard of Care, Section A*). If scene survey suggests release of, or exposure to gases which are dangerous or potentially so, contact fire personnel and/or other appropriate personnel to safely remove patient(s) to a safe zone.

Assessment

1. Assume **carbon monoxide (CO) poisoning** in settings of exposure to automobile engine exhaust, heating devices, barbeque grills or any equipment producing fumes/gases/smoke in an enclosed area and the patient presents with the following symptoms/signs without other obvious cause:
    - headache, nausea, vomiting, light-headedness, weakness, slight impairment of mental function and motor coordination; (20% blood saturation with carbon monoxide);
    - agitation, restlessness, confusion, syncope, staggering gait (30% saturation with carbon monoxide);
    - chest pain, cardiac dysrhythmias, convulsions, coma, death (greater than 40% saturation with carbon monoxide).

Note: Families or groups of people may be exposed simultaneously, and all may present with a variety of symptoms and signs, depending on the degree of exposure.

2. Be aware of general symptoms and signs of exposure to other noxious gases:
    - burning and irritation of mucous membranes in the eyes, throat and upper airways and other moist areas of the body, e.g. underarms, groin;
    - swelling or a feeling of constriction in the throat, neck, chest;
    - cough, bronchospasm, wheezing;
    - headache, nausea, vomiting.

Scuba Diving Injuries/Disorders

Personal and Patient Safety and Protection

1. Request appropriate public safety personnel to carry out rescue operations if required.
2. A paramedic will not participate in water or other types of rescue operations unless sanctioned by the paramedic's ambulance service operator.

Assessments

1. Assume life/limb/function threats:
   - near-drowning;
   - hypothermia;
   - barotrauma (ears, sinuses; pneumothorax - simple or tension);
   - other concurrent trauma;
   - **decompression sickness** (bends) (dissolution of nitrogen bubbles into blood and tissues when dive is too long and too deep): **symptoms delayed 10 minutes or more after surfacing, usually within 1-4 hours after surfacing;**
   - **arterial gas embolism** (air bubbles in the blood due to ascending too quickly or breath-holding during ascent): **loss of consciousness or other symptoms beginning underwater or within 5-10 minutes of surfacing;**
   - underlying disorders which may have precipitated events e.g. drug or alcohol consumption, hypoglycemia, cardiac dysrhythmia.
2. Conduct a scene survey, determine the M. of I.; perform the primary survey with manual C-spine control if spine injury is obvious, suspect or cannot be ruled out. Make a transport decision.
3. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
4. Elicit incident history - attempt to determine:
   - number, depth and duration of dives(s) (check dive log book if available);
   - water temperature, whether the water is grossly contaminated, polluted;
   - when symptoms occurred:
     - underwater, and/or,
     - upon surfacing or within minutes thereof (possible gas embolus); or
     - more than 10 minutes after surfacing (possible DCS);
   - rate of ascent.
5. Perform a **head-to-toe secondary survey,** including central nervous system assessment, baseline Glasgow Coma Score, plus injury survey if trauma cannot be ruled out.

   Make a second transport decision if still at scene.

Management

1. Initiate resuscitation in the water if the paramedic undertakes or assists with rescue efforts. Follow protocols as outlined in the *Near-Drowning Standard* and, where applicable, the *Cold Injury Standard* (see *Management, point ii* in each standard).
2. Manage primary survey critical findings, concurrent major injuries and other identified serious problems which are amenable to field treatment.
3. **Specific to scuba-diving incidents:**
   - Administer high concentration oxygen to all patients with suspect decompression sickness or arterial gas embolism or if in doubt regarding the presence of these disorders.
   - If air embolus is strongly suspected on initial assessment:
     - initiate rapid transport;
     - transport the patient secured/immobilized supine, or in the left lateral or recovery position (as dictated by concurrent injuries or problems);
     - if CPR is required, return the stretcher to neutral position and position the patient supine.

   Guidelines

   Maintenance of adequate airway, administration of high concentration oxygen and rapid transport take priority over positioning in managing air embolism. Left sided positioning has not been clearly shown to offer advantages with respect to impeding movement of air emboli to the head but is recommended for other reasons e.g. reduction of aspiration risk.

   Where accessible, consider air ambulance transport (cabin pressure at sea level or lowest possible safe altitude) if rapid access to a hyperbaric chamber is deemed necessary. If in doubt regarding the need for recompression, attempt to contact the receiving and/or base hospital physician, or staff of the local hyperbaric chamber (where applicable).

   Advise dispatch immediately on confirming symptoms and signs of decompression sickness.

4. Enroute: monitor (including neck veins if signs of respiratory distress and/or shock are evident). Re-evaluate and manage as required. Prepare for expected problems. If the patient is unstable, or potentially so, consider:
   - emesis;
   - seizures, other neurologic deficits;
   - alteration in mental status, decrease in level of consciousness;
   - shock;
   - tension pneumothorax;
   - cardiac arrest, respiratory distress/arrest.

Snake Bites

Personal and Patient Safety and Protection

1. Make no attempt to handle the snake - even dead snakes may envenomate reflexively if handled improperly.
2. Move the patient out of the vicinity of the snake when it is deemed safe to do so based on scene assessment and/or advice from other public safety personnel at scene. Request assistance from police and if available, expert personnel, e.g. animal control officer.

Assessments

1. Assume a venomous snake bite and the potential for development of life/limb/function threatening conditions:
   - **anaphylactic reaction** (especially children and elderly patients);
   - hypovolemic shock, respiratory distress, pulmonary edema - usually delayed; if evident at scene = **severe envenomation;**
   - central nervous system toxicity (see symptoms/signs to follow) - usually delayed; if evident at scene = **severe envenomation.**

   Be aware that most venomous snakes in North America are pit vipers, e.g. rattlesnakes. In Canada, most snake bites are from snakes kept as pets.
2. Conduct a scene survey, determine M. of I.; perform the primary survey. Make a transport decision.
3. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
4. Elicit incident history - attempt to determine if envenomation has occurred. Ask about symptoms/signs relevant to the type of snake which may have inflicted the bite.
   - **Pit viper bites**: immediate burning pain at the injury site, metallic or rubbery taste in the mouth +/-, weakness, dizziness, nausea, perioral numbness and tingling; shortness of breath.
   - **Other venomous snake bites e.g. coral snake:** minimal pain/swelling at the injury site; nausea, dizziness, restlessness, shortness of breath, numbness and tingling; slurred speech, difficulty swallowing, excessive salivation, muscle weakness; ptosis (drooping of the eyelids).

   Attempt to determine the size and type of snake, and the number of bites.

5. Perform minimum secondary survey physical assessments:
   - **examine the injury site for signs of envenomation:** perform other soft tissue injury assessments (as per *Soft Tissue Injuries Standard*); for pit vipers, the injury site should have the following characteristic appearance within 15 minutes of the bite:
     - edema, bruising, blisters;
     - fang marks (1, 2, or 3) vs. an entire jaw bite pattern for non-venomous snake bites;
   - assess **distal neurovascular status** in an affected extremity;
   - **Vital signs.**

Note: The absence of fang marks does not rule out envenomation - maintain a high index of suspicion if history, patient's condition is suggestive of envenomation. Some snakes can spit venom. Absorption may occur through broken skin and mucous membranes.

If envenomation is obvious/suspect, assess in addition:

- **Chest:** inspect, auscultate;
- **Skin:** inspect for swelling, mottling/cyanosis, pallor, hives;
- **Baseline Glasgow Coma Score:** if there are obvious neurologic deficits, assess sensation and motor function.

Perform additional assessments as indicated on the basis of history, the patient's condition and/or scene observations, e.g. other trauma assessments, and make a second transport decision if still at scene.

Management

1. If indicated based on assessment findings:
   - administer high concentration oxygen - all obvious/suspect envenomations;
   - assist ventilation;
   - manage shock;
   - initiate rapid transport - all cases of severe envenomation, especially patients with bites to the head, neck or torso.
2. If signs of envenomation are present, implement general measures to slow venom absorption:
   - position the patient supine, advise the patient to lie quietly; attempt to calm and reassure;
   - immobilize the bitten area at or slightly below heart level; attempt to remove rings or other tight bands;
   - cleanse the bitten area; application of cold packs is generally not advisable, since vasoconstriction may worsen tissue damage.
   - never apply a tourniquet, cut the bite area or apply suction.

   With respect to pit viper bites less than 30 minutes old:

     - contact local base hospital for direction.

3. Enroute: monitor; re-evaluate and manage as required; prepare for expected problems. If a venomous snake bite is obvious/suspect, expect:
    - emesis;
    - neurologic complications (as outlined under *Assessments point 3*, symptoms/signs);
    - neurovascular compromise in an affected extremity;
    - shock;
    - respiratory distress, arrest.

Section 5

Obstetrical Conditions

Pregnant Patient – General Assessment and Management Standard

Follow the *Medical Format - Short Form of General Standard of Care* with the following specifics:

If a midwife is present at the scene, follow the *Midwives at the Scene Standard* when carrying out patient assessment and management.

Personal Safety and Protection

Follow communicable disease best practices and infection control procedures during emergency deliveries and when assessing any patient with vaginal bleeding/fluid discharge.

Patient Communication

1. Be sensitive to maternal fears for the unborn child. Leave discussion of miscarriage, fetal death or fetal asphyxia (if obvious, suspect), to receiving facility staff. If discussed, be as comforting and reassuring as possible, but do not give false hope.

Assessments

1. Assume threats to the life/limb and/or function of both mother and fetus. Give priority to maternal assessment and care.
2. With respect to the primary survey - interpret findings in light of the anatomic and physiologic changes of pregnancy.

   Maintain a high index of suspicion for shock if the likelihood of shock is high (symptoms/signs may be masked by physiologic changes of pregnancy).
3. Elicit a **pregnancy history** in addition to the history of illness/incident:
   - due date; if unknown, ask the date of the first day of the last normal menstrual period (LNMP);
   - problems with the present pregnancy, e.g. infection, bleeding, diabetes;
   - abdominal pain/contractions, vaginal bleeding/fluid discharge occurring with/since onset of current condition (if a medical or trauma problem is the chief complaint); if yes - timing and intensity of contractions; severity of bleeding, discharge;
   - past history - number of previous pregnancies (gravida) and deliveries (para) and any problems with same; duration of labours, complications.

Guidelines

Due date = LNMP - 3 months + 7 days.

Consider **pre-eclampsia** in patients beyond 20 weeks of gestation who have nonspecific complaints of headache, nausea, abdominal pain with or without vomiting, blurred vision, fatigue, generalized swelling or rapid weight gain. Assume severe pre-eclampsia if level of consciousness or mental status is altered.

4. With respect to **secondary survey assessments:**

i) Attempt to ensure privacy during assessment.

ii) Assess **vital signs** including baseline Glasgow Coma Score.

iii) Assume ***pre-eclampsia*** if history is suggestive coupled with findings of:

- BP >140/90 (severe pre-eclampsia = diastolic BP >110);
- generalized edema - face, hands, legs, feet.

iv) Perform an ***abdominal exam*** on pregnant patients presenting with any of the following complaints/problems:

- abdominal pain, contractions or vaginal bleeding;
- malaise, weakness, dizziness, light-headedness, shortness of breath;
- headache, blurred vision, nausea, swelling (consider pre-eclampsia);
- involved in a motor vehicle accident;
- suffered a fall;
- blunt trauma involving the truncal area (obvious/suspect), regardless of whether there are specific complaints referrable to the abdomen;
- acceleration/deceleration injuries;
- penetrating trauma to the chest/abdomen.

v) ***When palpating the abdomen of patients beyond 20 weeks gestation:***

- Note uterine height if the uterus is easily palpable, e.g. uterus at the umbilicus = 20 weeks gestational size; uterus at the costal margins = 36 weeks.
- Palpate for contractions if reported or suggested by history. Note timing and intensity of contractions. Palpate between contractions to assess for abdominal tenderness, rigidity.
- Note palpable fetal parts, movement.

vi) Always don disposable non-latex sterile gloves prior to inspection and examination of the perineum.

vii) ***Inspect the perineum*** only if one or more of the following indications exist:

- The patient reports a history suggestive of ruptured membranes or cord prolapse, e.g. "my waters broke", "something is falling down/coming down from inside".
- The patient is in labour and reports an urge to push, strain or move the bowels with contractions or reports that "the baby is coming".

- The patient is near term, level of consciousness is decreased and history is unavailable, inconclusive or indicates that labour was on-going prior to decrease in/loss of consciousness.
- Vaginal bleeding is heavy and the patient is hypotensive or in shock.

On inspection, look for prolapsed cord, frank bleeding, meconium and/or fluid discharge from the vagina (amount, colour, note foul odour). If the patient is in active labour, look for signs of second stage, e.g. bloody show, bulging membranes, crowning or other presenting part (see *Labour Standard*).

viii) ***Carefully insert gloved fingers into the vagina only to attempt elevation of the presenting part and only under the following circumstances:***

- a prolapsed umbilical cord is visible on inspection of the vaginal opening, and,
- the cord pulse is weak or absent on cord palpation, and,
- the presenting part is or becomes clearly visible between and/or during contractions.

(See *Premature Rupture of Membranes/Prolapsed Umbilical Cord Standard*).

5. Utilize guidelines detailed in the *Pregnancy and Trauma Standard* to assist with assessment and management of the traumatized pregnant patient.

Management

1. ***Administer high concentration oxygen for all of the following pregnancy-related conditions:***
   - all ante- and post-partum hemorrhage;
   - all blunt trauma involving the truncal area (abdomen, back, pelvis);
   - "normal" labour (at term) accompanied by one or more critical findings (as per the *Oxygen Therapy Standard*);
   - premature labour;
   - labour with multiple births expected;
   - limb presentation;
   - umbilical cord prolapse;
   - fetal distress - meconium passed vaginally prior to delivery; fetal heart rate (if assessed) persistently <120 or >160 or irregular;
   - abdominal pain other than normal term labour pain;
   - eclampsia, severe pre-eclampsia (suspect, obvious).
2. Initiate rapid transport if indications exist as per the *Load and Go Patients Standard,* or other indications are present.
3. Transport the patient in a position of comfort. If near term, allow the patient to sit up and change position as required unless contraindicated by concurrent illness/injury.
4. If the full term patient must be reclined due to shock, injury or other conditions, place her in the left lateral position, or supine with the right hip/buttock elevated, or with the spine board tilted left.

Breech Delivery

This standard applies to frank breech (buttocks presentation) or complete breech (buttocks and feet presentation).

As for the *Emergency Delivery Standard,* with the following specifics:

Management

1. If a foot or hand is presenting make no attempt to deliver the infant. Initiate rapid transport. See *Limb Presentation Standard* for management.
2. If the breech is delivering:
   i) Allow delivery to occur spontaneously until the shoulders have been delivered; support the infant's body and legs as they deliver - allow the body to rest on the palm of your hand; elevate the legs with the free hand (see *Diagram 1*), or let them dangle freely over your supporting arm.
   ii) When the cord is visible, check the cord pulse - if absent or weak, elevate the infant's body and/or reposition the mother (elevate her buttocks or tilt her to the left or right lateral position). Re-assess the pulse. If still absent/weak, attempt maneuvers to assist delivery of the head as outlined under *point iv*).
   iii) When the nape of the neck becomes visible, gently lift and hold the infant upwards and backwards by the legs; avoid hyperextension of the infant's neck. Allow the head to deliver spontaneously (see *Diagrams 2 & 3*).
   iv) If the head does not deliver within 3 minutes of the body:
      - use your hands to support the infant's body with the infant's legs straddling your lower supporting arm;
      - with the lower supporting hand, reach into the lower end of the vagina, palm up; spread the index and middle fingers to form a "V" shape on either side of the infant's nose and mouth; push the wall of the vagina away from the infant's face to create an airway (see *Diagram 4*).

Guidelines

Additionally, if the head is not delivering within 3 minutes of creating an airway slide the free hand into the upper end of the vagina over the infant's occiput and exert gentle downward pressure to flex the head and assist delivery. Alternatively, place the free hand slightly above and just behind the maternal symphysis pubis and exert steady, firm downward pressure with the heel of the hand.

- If the head does not deliver, initiate rapid transport; keep the vaginal airway open for the infant enroute.

v) Wipe the infant's mouth and nose. Follow procedures as per the *Delivery Standard, points 4 to 8.*

Breech Delivery

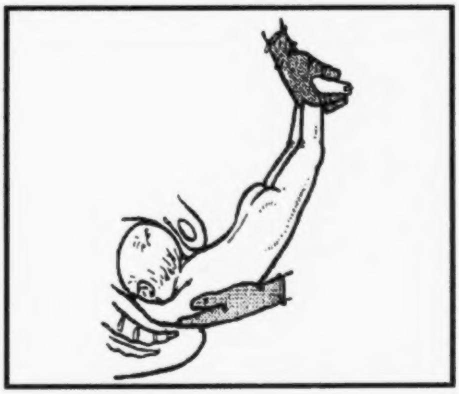


Diagram 1

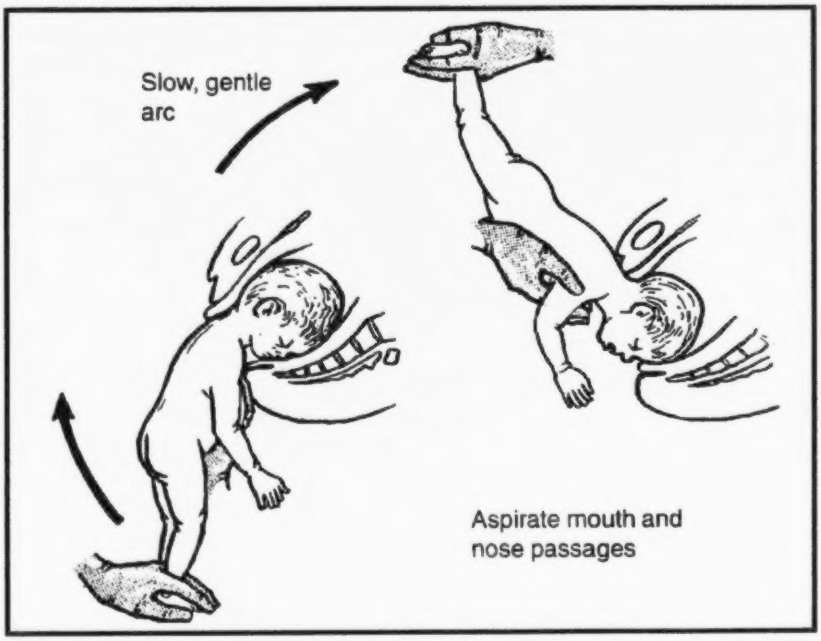

Slow, gentle arc
Aspirate mouth and nose passages

Diagram 2, 3

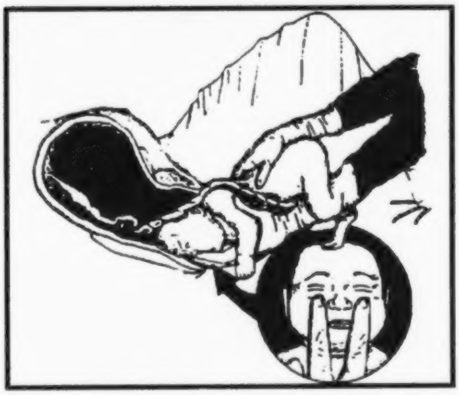


Diagram 4

Emergency Delivery

Note: In an emergency, if no obstetrical (OBS) kit is available, clean sheets and towels, clean heavy twine/shoelaces, plastic bags and clean examination gloves and goggles/protective eyewear will suffice to assist with delivery.

Once it has been determined that birth is imminent:

1. **Prepare for delivery:**

   i) Position the patient supine on a firm surface, with head and shoulders slightly elevated, legs flexed and abducted at hips and knees, feet flat and perineum clearly visible.

   ii) Do not overexpose the patient; remove sufficient clothing to allow a clear view of the vaginal opening; attempt to preserve warmth and privacy. Ask bystanders to leave, except for the patient's partner, or other bystander who is assisting with the delivery.

   iii) Open the obstetrical (OBS) kit; position the incontinence pad under the patient; position the drape sheet over the pad and under the perineum; keep the OBS kit within easy access, but out of range of contamination by blood or fluid.

   iv) Wash hands thoroughly (up to the elbows and for at least 5 minutes if time permits).

   v) Set up additional equipment; pre-check as time permits:
      - blankets;
      - infant suction device;
      - oxygen - check function;
      - pediatric bag valve mask - check function; attach oxygen;
      - stethoscope.

   vi) Don sterile examination gloves; don other PPE as time permits, e.g. gown, face mask, protective eyewear.

   vii) Position your partner or other assistant at the patient's head to coach, support, encourage and assist the patient.

   Guideline

   If time/circumstance allows, have family or bystander place towels in a clothes dryer to warm them and then use to wrap newborn infant.

2. **Wait for delivery:**
   - Let nature take its course; interfere no more than is necessary; support and comfort the patient.
   - Assist the patient with breathing; encourage her to breathe slowly through each contraction.
   - Watch for rupture of membranes if rupture has not yet occurred; manage umbilical cord prolapse should it occur (see *Premature Rupture of Membranes/Prolapsed Umbilical Cord Standard*).
   - Observe for crowning or other presenting part; manage limb presentation should it occur (see *Limb Presentation Standard*).
   - Wipe the perineum with the OBS towelette at any time after the presenting part becomes visible at the perineum; use additional moist, sterile gauze and/or clean towels to wipe or cover the perineum or perianal area if soiling with stool, urine or meconium occurs prior to or during delivery.
3. **Deliver the infant:** *(also see diagrams at the end of this standard, illustrating the physiologic mechanism of normal delivery.)*

   i) If the infant is breech, see *Breech Delivery Standard.*
   ii) When crowning is observed, deliver the head slowly in a controlled fashion with one hand on the infant's head, and the other on the lower end of the perineum exerting gentle, steady pressure in an upward direction.
   iii) Check for a nuchal cord (cord around the neck) - attempt to slip the cord over the infant's head or if only 1 loop, slip down over the infant's shoulders. If attempts are unsuccessful, clamp the cord in two places 5-7 cm apart using the OBS Kelly clamps. Cut the cord between the clamps using the OBS scissors. Once the cord is cut, the baby is functioning on its own and should be delivered in the next few minutes.
   iv) Wipe the infant's mouth and nose when visible. Suction if secretions appear excessive, the infant is cyanosed.
   v) After the head delivers, allow head rotation to occur spontaneously, without interference.
   vi) Support the infant's head and neck with one hand; use the other hand to assist and guide delivery of the body.
   vii) Deliver the shoulders - apply gentle pressure on the head: downward to deliver the anterior shoulder, then upward to deliver the posterior shoulder; do not pull on the head and neck.

- viii) If the shoulders are not delivering despite good efforts to push on the part of the patient and expert assistance is not immediately available, have the patient sharply flex her hips and knees and tuck the legs up close to the abdominal wall.
- ix) If delivery does not occur, initiate rapid transport to definitive medical care. Attempt to contact a base hospital physician for advice.

4. **Perform immediate newborn assessment and care:**

   - i) Hold the infant supine along your arm in slightly head down position and away from the perineum.
   - ii) Wipe the mouth and nose (if not already done); suction or re-suction only if necessary to clear the airway.
     Suction the mouth first (only to the back of the throat), then the nose; if there is meconium-staining or obviously visible meconium inside the mouth, nose or pharynx, thoroughly and vigorously suction the mouth, pharynx and nose.
   - iii) Dry the infant and immediately wrap in a blanket; perform a primary survey of both mother and infant - work with your partner; stimulate the infant if not responsive, e.g. rub the back, flick the soles of the feet; if breathing does not begin, ventilate the infant for 15-30 seconds and then assess pulse; determine APGAR Scores at 1 and 5 minutes post-partum if time and the infant's/mother's condition permits; manage post-partum hemorrhage if present (see *point 7.* to follow).
   - iv) If the infant's respirations/pulse are or remain absent/slow/weak, initiate further resuscitation (see *Neonatal Assessment and Management Standard*).
   - v) If the infant is responsive with good colour and cry after drying, and no or minimal stimulation is required, ensure the infant is well blanketed and give the child to the mother or place on the mother's abdomen or upper chest. Advise the mother that she may nurse the baby if she wishes.
   - vi) If not already done, clamp and cut the umbilical cord; wait until cord pulsations cease (usually around 30 seconds after birth); clamp the cord with the OBS Kelly clamps - clamp in 2 places, one around 15 cm from the infant's abdomen, the other 5-7 cm further away.

     Cut the cord between the clampswith the OBS scissors. When time permits, replace the Kelly clamp attached to the infant's portion of the cord with an OBS umbilical clamp.
   - vii) Note time of delivery (or approximate). Tag/tape the infant's arm with the time of delivery and the mother's name (if time, infant's/mother's condition permits).

5. **Wait for the placenta to deliver:**
   - Unless the placenta becomes visible within minutes of birth, initiate transport while awaiting placental delivery (delivery may take up to 30 minutes).
   - Do not pull on the umbilical cord; observe for signs of placental separation (one or all three may occur):
     - sudden gush of blood from the vagina;
     - lengthening of the umbilical cord;
     - uterine contraction palpable or verbalized by the mother at the time of placental separation.
   - If vaginal bleeding is evident, assume and manage post-partum hemorrhage - see *point 7.*

Guideline

If mother and baby are doing well, the paramedic may elect to wait for the placenta to deliver at scene. If delivery has not occurred within 15-20 minutes, initiate transport.

6. **Deliver the placenta:**
   - Gently lift the placenta out of the vagina when it becomes visible at the vaginal orifice.
   - Place the placenta in the plastic bag from the OBS kit; transport the placenta with the mother and infant. Label the bag.
7. **Perform post-partum care:**
   - Place an OBS pad over the perineum; attempt to clean up the area around the mother; blanket the mother (if not already done).
   - Note the amount and colour of vaginal bleeding; if flow is heavy e.g. >5 soaked sanitary pads, with or without clots, assume and manage post-partum hemorrhage (PPH):
     - repeat the primary survey; if shock is obvious/impending, position the mother supine,
     - assess the uterine fundus; if soft and boggy, place one hand just above the pubis; with the other hand, gently massage the fundus - use circular motions with the flat of the hand;
     - inspect the perineum for lacerations, obvious bleeding sites; apply direct pressure to bleeding areas;
     - encourage the mother to nurse the infant (this will stimulate the release of maternal oxytocin hormone which causes uterine muscle contraction);
     - place an OBS pad or other bulky dressing over the perineum to absorb the flow;
     - initiate rapid transport (if not already underway).
8. **Transport, care enroute:**
   - Transport minimum return priority Code 3 e.g. if mother and infant are doing well.
   - Monitor the mother and infant; re-evaluate and manage as required; prepare for expected problems:
     - maternal shock (if heavy vaginal bleeding);
     - neonatal respiratory distress/arrest, cardiac arrest (if the infant is responding poorly, or pulse/respirations are weak).
   - Notify the receiving facility of the status of mother and infant.

Labour

Follow the *Medical Format - Short Form of General Standard of Care* and the *Pregnant Patient - General Assessment and Management Standard,* with the following specifics:

Assessments

1. Be aware of ***indicators of the second stage of labour*** *(all may not be present concurrently):*
   - contractions every 2 minutes, lasting 60-90 seconds; (in the multip, contractions every 5 minutes may indicate second stage labour);
   - contractions associated with maternal urge to push or to move the bowels;
   - heavy red show visible at the vaginal orifice;
   - presenting part or bulging membranes visible at the vaginal orifice.
2. With respect to history: document the standard pregnancy history, plus specific questions regarding labour:
   - onset, frequency and duration of contractions;
   - membranes ruptured or not;
   - urge to strain, bear down, push or move the bowels with contractions;
   - in multips - length of previous labours; problems with previous deliveries.

   Guidelines

   Patients in advanced labour will not be able to give much history. Question others at the scene.

3. Perform minimum secondary survey physical assessments:
   - **Abdomen:** inspect; palpate for contractions (frequency, duration); note uterine height, obvious fetal parts/movement on palpation;
   - **Perineum:** inspect if indicated (see *Pregnant Patient - General Assessment and Management Standard, Assessments, 4. vi*);
   - **Vital signs.**

Management

1. Administer high concentration oxygen if indicated.
2. Offer comfort and reassurance; attempt to preserve warmth and privacy.
3. Make decisions regarding maternal transport and infant delivery after the secondary survey (unless critical findings dictate earlier transport after the primary survey).
   a) ***Initiate rapid transport* if:**
      - a limb is presenting at the vaginal orifice;
      - the umbilical cord is prolapsed - **exception** - if delivery appears imminent (see *Guidelines* this section);
      - pre-eclampsia is obvious/suspect - **exception** - if delivery appears imminent (see *Guidelines* this section).

   b) Make other transport decisions (deliver at scene vs. initiate rapid transport) on the basis of whether:
      - the patient is in the second stage of labour;
      - the mother is stable (vital signs normal);
      - delivery appears imminent.

Guidelines

Rapid Transport vs. Delivery at Scene - Patient in the Second Stage of Labour

i. **Initiate rapid transport, prepare to deliver enroute:**
   - **primips**: presenting part not visible at any time (during or between contractions); no straining or urge to push with contractions; (contractions usually 2 minutes apart);
   - **primips:** presenting part visible only with "bearing down" contractions; and transport time is short e.g. 10 minutes or less; (contractions less than 2 minutes apart);
   - **multips:** contractions approximately 5 minutes apart; no urge to push; presenting part not visible at any time (during or between contractions);
   - **if one or more complications exist, and delivery is not imminent** (as per *point ii* to follow):
     - profuse vaginal bleeding - patient hypotensive or in shock;
     - multiple births expected;
     - premature labour (<35 completed weeks of gestation).

   If delivery becomes imminent enroute, stop the vehicle, park in a safe place, and prepare to deliver the infant.

ii. **Prepare to deliver at scene if delivery appears imminent:**

- crowning or other presenting part visible, or;
- **in primips:** presenting part is visible during and between contractions + maternal urge to push or bear down, restlessness, and contractions less than 2 minutes apart, or;
- **in multips:** contractions 5 minutes apart or less + any other signs of second stage labour (contractions associated with urge to push or move bowels, heavy red show or presenting part/bulging membranes visible at the vaginal orifice during or between contractions).

If delivery has not occurred at scene within 10 minutes of initial assessment, consider undertaking rapid transport. Consider contacting a base hospital physician for direction. Make decisions on a case-by-case basis, and take into account such factors as:

- whether the patient is a multip or a primip (multips may deliver precipitously, with little warning; primips' labours may last anywhere from 6-16+ hours, and the second stage for primips is much longer than for multips);
- past history of precipitous delivery (these patients may deliver when you least expect it);
- rapidity of progress made, if any, since paramedic arrival at scene;
- distance to closest hospital emergency department;
- traffic and environmental conditions;
- onset and/or increase in vaginal bleeding;
- whether multiple births are expected (the 2nd child will usually not deliver for 10 minutes or more after the first);
- premature labour (neonatal resuscitation will likely be required);
- whether the patient has symptoms/signs of pre-clampsia (delivery may be precipitous; neonatal resuscitation may be required).

Guidelines

If the infant appears to be presenting face up (vs. crown of head), follow the same procedures as above. Do not attempt delivery. This presentation can be very difficult to deliver.

4. ***If the patient is assessed as being in the first stage of labour,*** i.e. no signs of second stage; contractions >2 minutes apart (primip), or >5 minutes apart (multip):

- Undertake transport minimum return priority Code 3 for primips.
- Assist the patient with labour as outlined under *Management, point 5.*
- Monitor for signs of second stage labour and prepare for delivery if and when it becomes imminent. Be especially alert for precipitous delivery in multips.

5. **If/when transport is undertaken,** assist the patient with labour and employ measures to help delay delivery until arrival at the receiving facility:
    - If the patient is in early labour, i.e. delivery is not imminent, allow the patient to assume a position of comfort.
    - If the patient is in the second stage of labour, position her supine or in the left lateral position, with knees/hips flexed. Alternatively, position supine with the right buttock elevated and knees/hips partly flexed.
    - Help the patient breathe slowly through each contraction, e.g. "breathe out two, three, in, two, three".
    - If the patient has an urge to push or bear down with contractions, discourage pushing. Encourage the patient to "pant and blow" throughout these contractions.
    - Anticipate delivery if the patient is in the second stage of labour and empties her bowels or bladder enroute.
6. ***If meconium or meconium-stained fluid appears at the vaginal orifice,*** administer high concentration oxygen to the mother (if not already administered for other reasons).
7. ***If delivery is likely to occur enroute,*** prepare the obstetrical (OBS) kit and neonatal resuscitation equipment.

    If delivery becomes imminent enroute, pull over, stop the ambulance, park safely and prepare to deliver the infant (see *Emergency Delivery Standard*).
8. Manage cord prolapse, limb presentation, normal delivery, breech, premature or multiple births, and neonatal resuscitation as required (see standards for each).
9. Notify the receiving facility of delivery at scene or enroute, or if the patient is in active labour and delivery is imminent.

Limb Presentation

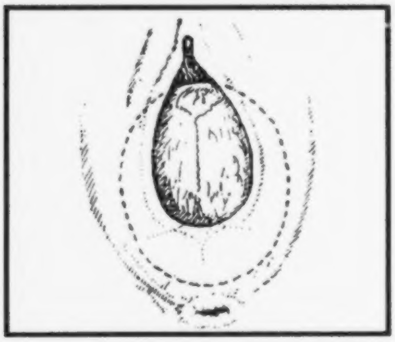
Management

1. Do not attempt delivery. Leave the limb outside the vagina. Wrap the limb in a blanket (cloth or foil rescue blanket).
2. Position the patient on her left side with hips and knees flexed (fetal position), or supine with hips/buttocks elevated and knees/hips partly flexed.
3. Administer high concentration oxygen.
4. Initiate rapid transport.
5. Strongly discourage pushing with contractions - encourage the patient to "pant and blow" if she has the urge to bear down.
6. Notify the receiving facility enroute. Prepare for delivery and neonatal resuscitation enroute.

Mechanism of Normal Delivery

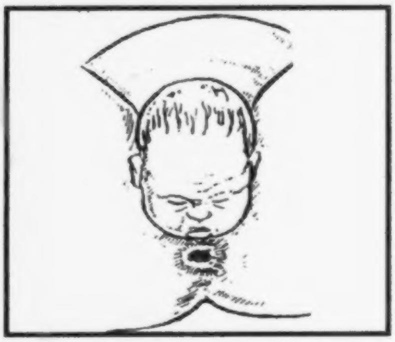
Adapted with permission from Obstetrics Illustrated, 2nd edition. Garry/Govan/Hodge/Callander. Churchill Livingstone Press, 1974.

Frontal Views



Crowning

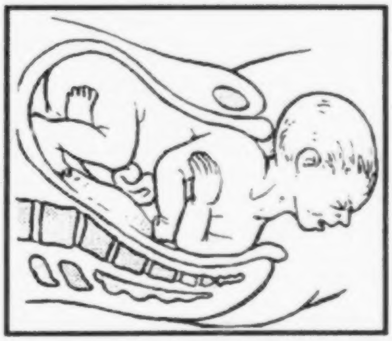
Lateral Views

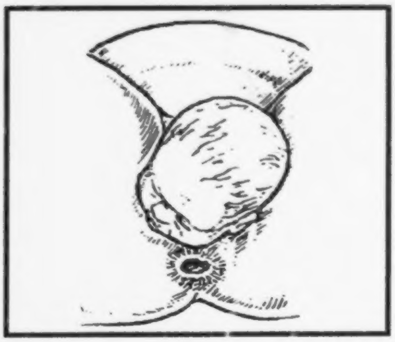


Delivery of Head

Decent and delivery has brought the shoulders into the pelvic cavity.

The head on delivery is oblique to the line of the shoulders.

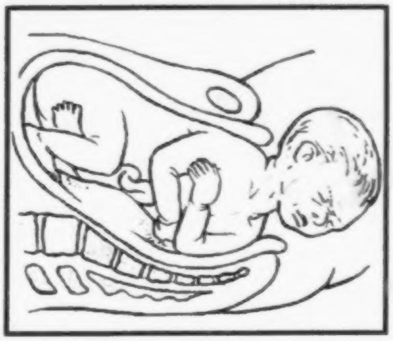


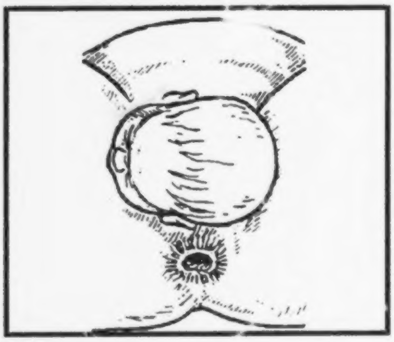


Restitution

The head now rotates (external rotation) to the natural position relative to the shoulders. This is known as restitution.

Descent continues and the shoulders rotate to bring them in-line with the antero-posterior diameter of the maternal pelvic outlet.

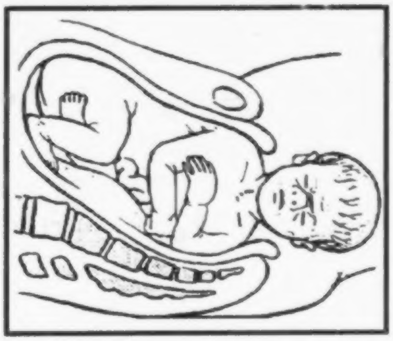




External Rotation

This descent and rotation of the shoulders causes the head to externally rotate so that the occiput lies next to the left or right maternal thigh.

The anterior shoulder now slips under the pubis and with lateral flexion of the fetal body the posterior shoulder is born. The rest of the body follows easily.



Midwives at the Scene Standard

Paramedics and Midwives will work cooperatively in making decisions and providing quality patient care to the mother and neonate during an out-of-hospital birth.

Definitions

Out-of-hospital birth:	Any planned birth where the woman's chosen birth place is not a hospital.
Midwife:	A person who has acquired the requiste qualifications and is registered to practice midwifery in Ontario. A registered midwife is qualified to provide supervision, care and advice to women during pregnancy, labour and the post-partum period, to conduct spontaneous normal vaginal deliveries on their own responsibility and to care for the newborn and the mother.

The Role of the Midwife

The basic elements of the midwife's activities are:

a) Carrying out examinations necessary to establish and monitor normal pregnancies.

b) Advising mothers-to-be on securing the examinations necessary for the earliest possible diagnosis of pregnancies at risk.

c) Providing education and preparation of clients for childbirth, including advice on exercise and nutrition.

d) Caring for and assisting the mother during labour and monitoring the condition of the fetus by the appropriate clinical and technical means.

e) Supervising and assisting with spontaneous vaginal deliveries.

f) Recognizing the warning signs of abnormality in the mother or infant that necessitates referral to a physician.

g) Taking necessary emergency measures in the event of a crisis.

h) Examining and caring for the newborn infant.

i) Caring for the mother in the postpartum period and advising her on infant care and family planning.

Procedure

1. Upon being dispatched on a request for ambulance service to an out-of-hospital birth scene, paramedics will obtain from dispatch all pertinent information related to the call and specific instructions.
2. Upon arrival at the scene of an out-of-hospital birth where a person is assisting the mother, the paramedic will determine the following;
   a) Confirm the nature of the request for ambulance service and who requested the service.
   b) The condition of the patient(s) and the progression of the labour and/or delivery.
   c) The capacity in which the person assisting with the birth is acting (i.e. trained midwife, nurse, person of non-medical background).
3. When a person assisting with the out-of-hospital birth identifies themselves as a midwife, the paramedic will:
   a) Confirm with the patient that this person has been retained by them to assist with the birth.
   b) Confirm that the midwife is registered with the College of Midwives (if the midwife is not known to the paramedic).
4. The paramedic will work cooperatively with the midwife in providing quality care to the patient and/or neonate at the scene and throughout transportation to the hospital.
5. Should the midwife's care or management of the patient and/or infant(s) be in contradiction of approved *BLS Patient Care Standards*, the paramedic will, with the patient's consent, assume full control of the situation. Where available, consultation will be made with the Base Hospital Physician.

Note: With the patient's consent for care and transport, the paramedic is ultimately responsible for the welfare of the patient, regardless of whether or not the paramedic utilizes the midwife's expertise and assistance.

6. Upon completion of a call to an out-of-hospital birth scene with a midwife present, the paramedic will note on the Ambulance Call Report the midwife's presence and involvement, (including the name of the midwife).

Multiple Births

Management

As for the *Emergency Delivery Standard*, with the following specifics:

1. Be prepared to manage one or more of:
    - breech presentation;
    - prolapsed umbilical cord;
    - premature infant;
    - post-partum hemorrhage.
2. Prepare for full neonatal resuscitation (CPR).
3. If the first infant is delivered at scene, initiate rapid transport immediately after delivery.
4. Note time of delivery for each infant; tag/identify the infants in order of delivery.

Neonatal Assessment and Management

Assessment and Management

1. If the infant has been delivered prior to paramedic arrival:
   - work with your partner to perform concurrent assessments of mother and infant;
   - elicit a brief history of the pregnancy and details of labour and delivery. Attempt to determine:
     - duration of labour;
     - difficulty with delivery;
     - who delivered the infant;
     - whether delivery was precipitous;
     - approximate time of delivery;
     - degree of post-partum hemorrhage;
     - infant's colour, breathing, activity since delivery;
     - what has been done for the child since delivery.
   - manage post-partum hemorrhage if on-going.
2. If delivery is imminent, prepare neonatal resuscitation equipment:
   - blankets;
   - oxygen - check function;
   - infant suction device;
   - pediatric BVM - check function; attach oxygen;
   - stethoscope.
3. After the head has been delivered, wipe the nose and mouth; suction if mucous is excessive.
4. After the infant has been delivered, work with your partner:
   - Re-assess the mother for post-partum hemorrhage; reassess the ABCs, level of consciousness.
   - Position the infant supine (slightly head down, if possible) on a firm surface; extend the neck slightly. If necessary, place a small towel roll (approximately 2.5 cm thick) beneath the infant's shoulders to facilitate head positioning.
   - Maintain body temperature. Pat the infant dry; blanket and cover the head; stimulate the infant if unresponsive or poorly responsive, e.g. rub the back or chest, flick the heels, or soles of the feet.
   - Assess the infant's airway, breathing and circulation; use the brachial pulse or apex beat; check pulse for at least 6 seconds.
   - Perform suctioning if required (see *point 5.*). If breathing does not occur with drying, suctioning and a brief (10-15 second) period of stimulation, then ventilate for 15-30 seconds. e.g. via pediatric BVM with supplemental oxygen.
   - Provide free flow oxygen if there are immediate signs of respiratory distress (see *point 6.*).

5. With respect to **suctioning:**
   a) If the infant has a strong cry and good respirations, suction/re-suction **only if** secretions appear excessive or meconium/meconium-staining is evident.
   b) If cry/breathing is weak/absent and/or there are excessive secretions, central cyanosis, meconium/meconium-staining, grunting or gasping respirations, or chest wall retractions, suction to clear the airway. Suction the mouth (to the back of the tongue), then the nose.
   c) If there is meconium-staining or obviously visible meconium inside the mouth, nose or pharynx, thoroughly suction the naso and oropharynx.
6. With respect to **colour, breathing, and circulation:**
   a) If respirations are/become adequate with previous measures, and heart rate is >100/minute, but **central cyanosis** is present:
      - administer free flow humidified oxygen (5-6 L/minute) via oxygen tubing; hold tubing about 1-2 cm from the infant's nose; alternately, attach the tubing to an oxygen mask and hold the mask firmly over the infant's face, or create a small "tent" above the infant's head with foil rescue blanket, towel, etc.;
      - gradually withdraw oxygen when the infant becomes pink; re-administer and withdraw as required for recurrent central cyanosis.

Guidelines

Cyanosis of the hands and feet is common and should clear with drying, stimulation etc. More profound extremity and/or central cyanosis should be treated with oxygen as described above.

b) **If respirations are absent or gasping, or heart rate is <100/minute, and/or there is persistent central cyanosis >30 seconds despite 100% oxygen,** ventilate with a pediatric BVM at 40-60 breaths/minute; use short quick puffs and the minimum pressure required to achieve slight chest rise and fall; ensure a tight face-mask seal.
  - **If heart sounds/pulse is absent on initial assessment,** initiate chest compressions concurrent with ventilations. Discontinue chest compressions when heart rate is at least 60/minute.
  - **If heart rate is <100/minute on initial assessment, reassess after 15-30 ventilations (approximately 15-30 seconds.)**
    - if heart rate is rising, continue ventilation until rate is at least 100/minute;
    - if heart rate is <60/minute, initiate chest compressions;
    - with compressions, reassess and ensure adequacy of ventilation and airway control, i.e. reassess chest rise, mask seal, breath sounds, oxygen concentration;
    - discontinue chest compressions when heart rate is at least 60/minute;
    - if/when heart rate is at least 100/minute, attempt to slowly reduce rate and pressure of ventilations and observe for signs of spontaneous breathing. Re-institute ventilation at previous rates if spontaneous breathing does not occur, or if breathing appears inadequate. Apply gentle tactile stimulation to help initiate/maintain spontaneous respirations.

c) With respect to **chest compressions:**
  - compress at 3x the ventilation rate to achieve 90 compressions and 30 breaths per minute (3:1 ratio of compressions to breaths) to a depth of approximately one third of the depth of the chest
  - **Preferred compression technique:** 2 thumbs on the lower third of the sternum with fingers encircling the chest and supporting the back;
  - **Alternative compression technique:** 2 fingers on the lower third of the sternum with the second hand supporting the back;
  - re-assess heart rate every 30 seconds for 6 seconds; discontinue compressions when heart rate is >60/minute.

7. Initiate rapid transport if the infant is unstable (APGAR Score <7, or ABCs remain compromised). Continue resuscitation enroute.

8. If mother and infant are stable post-partum, transport minimum priority Code 3.

9. Notify the receiving facility enroute of the status of mother and infant.

Premature Labour and Delivery – (Onset of labour at <35 completed weeks of gestation)

Management

As for the *Emergency Delivery Standard,* with the following specifics:

1. Prepare for a precipitous delivery and possible breech presentation.
2. Prepare for full neonatal resuscitation (CPR).
3. Attempt to deliver the head in a very slow, controlled fashion.
4. Handle the infant with extreme care and gentleness.
5. Initiate immediate warming (blanket, foil rescue blanket) and resuscitation.

Guidelines

Infants born between 20-25 weeks gestation may be stillborn or die quickly. Initiate immediate resuscitation and rapid transport. Attempt to contact the receiving or base hospital physician as soon as possible for further direction. Reassure the mother that everything possible is being done for the baby, but do not give false hope.

If the infant is obviously dead - e.g. foul body odour, skin blistered, skin/tissue deteriorated/discolored, head soft - do not resuscitate. Advise the mother as gently as possible. Allow her to see the infant if she so desires. Provide emotional support.

Premature Rupture of Membranes/Prolapsed Umbilical Cord

History suggestive of fluid gush from the vagina, feeling of "something coming down or falling down from inside" (the vagina), discharge of clear/yellowish fluid from the vagina.

Assessments

1. Assume potential life threats to both mother and fetus.
2. Perform the primary survey. Elicit history. Perform expected minimum secondary survey physical assessments:
   - **Perineum:** inspect on a priority basis if history is strongly suggestive of cord prolapse. If the cord is visible, don a sterile examination glove and palpate the cord pulse. If the pulse is weak or absent, immediately attempt to relieve cord compression (see *management point 3*).
   - **Inspect for meconium-staining** of the amniotic fluid if fluid is leaking from the vagina.
   - **Abdomen:** inspect; palpate for tenderness, rigidity, contractions.
   - **Vital signs.**

   Make a transport decision.

Management

1. Administer high concentration oxygen if:
   - the cord is prolapsed;
   - meconium is passed vaginally;
   - amniotic fluid is meconium-stained;
   - other indications exist (as per *Load and Go Patients Standard*).
2. Initiate rapid transport of all patients with cord prolapse **- exception -** if crowning is present or delivery appears imminent e.g. presenting part is visible, patient reporting urge to push/ bear down with contractions, heavy red show is visible at the vaginal orifice.

3. **Specific to cord prolapse:**
   i) If the cord pulse is weak or absent, immediately attempt to relieve cord compression:
      - ***If the presenting part is visible between and/or during contractions,*** insert two gloved fingers into the vagina and gently elevate the part away from the cord. Continue elevation of the part throughout transport. If a fontanelle is obviously palpable, move fingers to a firm area of the fetal skull.
      - If elevation fails to relieve cord pressure, attempt re-positioning the patient.
      - ***If the presenting part is not visible at any time,*** do not insert fingers into the vagina. Attempt to restore/improve the cord pulse by repositioning the patient.
      - Recheck the cord pulse after elevation of the presenting part and after each patient re-positioning.

   ii) Leave the umbilical cord outside the vagina. Do not pull on the cord.

   iii) Wrap the visible portion of the cord in a sterile gauze moistened with saline. Cover with a dry dressing - ensure that the cord pulse can be easily assessed through the dressing. Handle the cord as little as possible (handling may precipitate spasm of cord vessels).

Guidelines

Utilize the following guidelines to re-position the patient to relieve cord compression:

- position supine, buttocks elevated, knees/hips flexed, or,
- if the cord appears to be compressed on the right side of the vagina, attempt the left lateral position, knees/hips fully flexed, or, position supine with right buttock elevated; if necessary, apply gentle, manual abdominal pressure to push the uterus to the left, or,
- if the cord appears to be compressed on the left side of the vagina, attempt the right lateral position, knees/hips fully flexed, or, position supine with left buttock elevated; if necessary, apply gentle manual, abdominal pressure to push the uterus to the right, or,
- position prone, with knees to chest (all fours position). This position is not recommended if the patient is in the back of a moving ambulance.

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4. Give the patient nothing by mouth (NPO); comfort and reassure. Preserve warmth and privacy.

5. Enroute: monitor (including cord pulse every 5 minutes, and monitor for onset of contractions). Re-evaluate and manage as required. Prepare for emergency delivery if likely to occur on the basis of assessment.

Seizure in the Pregnant Patient

As for the *Seizure Standard - Adult/Child,* with the following specifics:

Note: The specifics outlined in this standard also apply to pregnant patients who present during the second or third trimester with complaints of headache, malaise, nausea and abdominal pain.

Assessments

1. If the patient is 20 weeks gestation or beyond, assume pre-eclampsia/eclampsia (pregnancy-induced hypertension), even in patients with a known seizure disorder.

   Guidelines

   The spectrum of symptoms/signs of pre-eclampsia are as follows (major features are bolded):

   - **headache,** blurred vision, abdominal pain, nausea, vomiting; rapid weight gain;
   - **generalized edema,** particularly of the face, hands, legs and feet;
   - **hypertension** (blood pressure 140/90 or higher; diastolic blood pressure above 110 if pre-eclampsia is severe);
   - **altered mental status or decreased level of consciousness** prior to the seizure episode;
   - respiratory distress, elevated neck veins (pre-eclampsia may be complicated by pulmonary edema);
   - neurologic deficits, unequal pupils (pre-eclampsia may be associated with severe hypertension and/or intracranial hemorrhage).

2. Perform the primary survey. Make a transport decision. Elicit history - attempt to determine if the patient has had symptoms/signs of pre-eclampsia.
3. Initiate cardiac monitoring (as per *Section F – General Standard of Care*).
4. Perform a **head-to-toe** secondary survey when the patient is post-ictal, to include:
   - **Assessment for signs of pre-eclampsia;**
   - **Abdomen: inspection/palpation** - assess for tenderness, rigidity, contractions; note fetal movements (observed or palpated);
   - **Inspection of the perineum if indications exist** e.g. if history, presenting condition is suggestive of ruptured membranes/prolapsed cord, second stage of labour, imminent delivery, significant vaginal bleeding, or, if history is unavailable or inconclusive and the patient is near term, or history indicates second stage of labour was on-going prior to the seizure;
   - **Baseline Glasgow Coma Score; pupillary size, equality, reactivity;**
   - **Vital signs.**

   Make a second transport decision if still at scene.

Management

1. Manage primary survey critical findings; manage the seizure (if on-going); administer high concentration oxygen.
2. Initiate rapid transport **unless** delivery is imminent (see *Labour Standard*).
3. Transport in a position of comfort or as dictated by complications or co-existing conditions:
    - keep patient movement and handling to a minimum; comfort and reassure. Keep light low inside the patient compartment if it does not hinder appropriate patient care and monitoring.

   Use lights and sirens only as required to expedite transport.
4. Enroute:
    - Monitor; re-evaluate and manage as required. Assist the patient with labour if labour has begun (see *Labour Standard, Management point 5.*). Comfort and reassure - be sensitive to maternal fears for the unborn child.
    - If delivery becomes imminent enroute, pull over, stop the ambulance, park safely and prepare to deliver the infant.
    - If pre-eclampsia is obvious/suspect, be prepared for:
        - precipitous delivery;
        - cord prolapse;
        - premature infant;
        - neonatal resuscitation, including CPR;
        - maternal seizures, hemorrhage post-partum.
    - Prepare for other expected problems:
        - emesis;
        - agitation, combative behaviour;
        - seizures;
        - respiratory distress (if pulmonary edema complicates pre-eclampsia).
    - Restrain the patient only if required to prevent harm to herself and/or the crew; use only the minimum amount of restraint required to protect the patient and crew.

Trauma in the Pregnant Patient

Hemorrhagic shock and associated fetal hypoxemia are the major causes of trauma-related maternal and fetal death respectively.

Deaths can be attributed to the following:

1. Signs of shock may not be obvious until shock is well advanced. This is due to a combination of normal physiologic changes of pregnancy:
   - With increased blood volume, a 30-35% blood loss can occur before symptoms and signs of shock appear in an otherwise healthy female.
   - Between 10-20% of normal uterine blood flow is shunted away from the uterus to compensate for maternal shock, further masking maternal symptoms and signs while severely compromising the fetus.
   - Cold, clammy skin may not be evident due to decreased peripheral vascular resistance with resultant vasodilation of cutaneous vessels.
2. The enlarged uterus is more susceptible to injury and severe hemorrhage is more likely secondary to increased blood flow through the uterus (600-700 ml/minute near term) coupled with the rich placental circulation.
3. **With respect to abdominal blunt trauma (includes pelvis and back):**
   - Blunt trauma is more difficult to assess due to the bulk of the uterus.
   - Sudden blunt trauma during the later months of pregnancy may result in:
     - uterine rupture, abruptio placenta;
     - premature labour;
     - severe bleeding from enlarged vessels around the uterus;
     - ruptured diaphragm, liver and spleen.
   - Minor blunt trauma which does not involve acceleration/deceleration usually does not harm the fetus because the amniotic fluid serves as a "shock absorber".
   - Placental separation and subsequent stillbirth can occur within hours of even minor blunt trauma if acceleration/deceleration forces are involved; these patients may have no evidence of abdominal trauma on examination; **maintain a high index of suspicion for occult internal injury.**
   - If major blunt trauma is obvious/suspect, mark the top of the uterus with a marking pencil (if available); note abdominal/uterine enlargement occurring at the scene or enroute.
4. All pregnant trauma patients must be transported for evaluation. If the patient is near term, every effort must be made to position the patient in the left lateral position to avoid the supine hypotension syndrome; if the patient is immobilized on a spine board, the board should be tilted to the left side and supported in that position by pillows or rolled blankets.

5. Administer high concentration oxygen to all injured pregnant patients as detailed in the *Oxygen Therapy Standard.*
6. Prepare for emesis - gastric emptying is delayed in pregnant patients.
7. Notify the receiving facility while enroute regarding pregnant women in whom serious injury is obvious/suspect.

Other Considerations

1. Severe pre-eclampsia and eclampsia may mimic head injury. Both must be considered in the traumatized pregnant patient. If mental status is altered in the pregnant trauma patient, consider:
    - shock;
    - head injury;
    - pre-eclampsia/eclampsia.
2. Seizures and hypertension may accompany both eclampsia and head injury. Look for evidence of facial and peripheral edema if pre-eclampsia is suspect.

Traumatic Maternal Cardiac Arrest

Factors Associated With Increased Fetal Survival Rates/Improved Neurologic Outcome:

- **time interval from maternal death to delivery** (the fetus can survive with intact neurologic function for up to 15 minutes after maternal cardiac arrest);
- initiation of BCLS within 4 minutes of maternal cardiac arrest;
- fetal status i.e. Are fetal movements detectable on palpation of the abdomen? Is there a detectable fetal heart rate?
- fetal maturity >24 weeks;
- duration and nature of maternal injuries which led to cardiac arrest;
- transport time <10 minutes to the receiving facility;
- proximity of in-hospital neonatal intensive care.

Act Quickly to Save the Fetus:

1. If the patient (the mother) is obviously dead as per *Patients with Vital Signs Absent (Transportation) Standard* do not initiate CPR.
2. If the patient does not meet obvious death criteria:
   a) **Immediately** place the patient in the left lateral position and re-check the carotid pulse. (In the supine position, the supine hypotensive syndrome [compression of the inferior vena cava by the gravid uterus] may be causing shock and contributing to cardiac arrest.)
   b) If there is still no pulse, reposition the patient supine; elevate the right buttock on pillows; manually shift the uterus to the left side if necessary. Initiate appropriate SAED protocols in accordance with *ALS Patient Care Standards,* if authorized. Commence CPR and administer high concentration oxygen.
   c) Initiate rapid transport. Continue CPR enroute; notify receiving staff enroute.

Vaginal Bleeding – Known Pregnancy, No History of Trauma

Assessments

1. Assume maternal and fetal life threats.

   In the first trimester:

   - threatened/spontaneous abortion;
   - ruptured ectopic pregnancy (all women of child-bearing age with abdominal pain, syncope/near-syncope and vaginal bleeding/spotting, recent missed or irregular periods).

   Beyond the first trimester:

   - placental hemorrhage e.g. placenta previa (usually painless); abruptio placenta (usually painful).

2. Perform the primary survey: maintain a high index of suspicion for shock in patients near term (signs may be masked). Make a transport decision.

3. Elicit history: with respect to bleeding, attempt to determine:
   - if bleeding is painless or associated with abdominal pain/cramping;
   - number of prior episodes - cause, if known;
   - if bleeding is associated with uterine contractions; if yes, timing and duration of same;
   - degree/severity of blood loss, e.g. duration of hemorrhage, rate of flow, reported or obvious passage of clots/tissue/fetal parts, quantity of blood-soaked materials present at scene.

4. Perform expected minimum **secondary survey physical assessments:**
   - **Abdomen:** inspect, palpate; if uterus is palpable, note uterine height and palpate for contractions; note fetal movements (observed, palpable);
   - **Perineum:** inspect if bleeding is profuse (reported/obvious);
   - **Vital signs.**

   Make a second transport decision if still at scene.

   Guideline

   Patients with a ruptured ectopic pregnancy may present with bradycardia/hypotension rather than tachycardia/hypotension, possibly due to stimulation of the parasympathetic nervous system by the large volume of blood in the peritoneal cavity.

Management

1. Administer high concentration oxygen.
2. If indicated, manage and position the patient for shock:
   - during early pregnancy, position supine;
   - beyond 20 weeks gestation, position in left lateral position with legs elevated on a pillow/blanket roll, or, supine with a pillow/blanket roll elevating the right buttock. If necessary i.e. BP not improving despite positioning, gently displace the uterus to the left side with manual pressure to correct possible supine hypotensive syndrome.
3. Place or have the patient place an abdominal pad or pressure dressing over (not into) the vagina. Replace and save pads as they become blood-soaked.
4. Give the patient nothing by mouth (keep NPO). Provide comfort and reassurance. Manage labour as required (see *Labour Standard*). When possible, leave discussion of threatened or obvious abortion for receiving facility staff. If discussed, be sensitive to maternal fears for the unborn child.
5. Enroute: monitor; re-evaluate and manage as required. Prepare for expected problems:
   - emesis;
   - shock if bleeding is heavy;
   - seizures, respiratory distress if bleeding is associated with severe pre-eclampsia;
   - emergency delivery and neonatal resuscitation if the patient is in the second stage of labour.
6. Advise receiving facility staff of estimated blood loss and number of abdominal pads used enroute.

Section 6

Pediatrics

Pediatric General Assessment and Management Standard

Also see *Pediatric General Assessment and Management - Additional Guidelines.*

As per the *Medical* or *Trauma Formats - Short Forms of General Standard of Care,* as applicable, and the additional guidelines which follow, with the following specifics:

The term "parents" as used in this standard is also intended to cover other caretakers.

Assessments

1. Attempt to calm and reassure the parent(s) and child. Provide comfort. Handle the child gently.
2. Use equipment appropriate to the patient's size (where applicable, available).
3. If the child is in extremis, separate the parents from the child if they are interfering with resuscitation procedures to the extent that the child's life, limb or vital functions may be endangered. Request a responsible adult at scene to stay with the parents.
4. During the primary survey, be aware of problems arising due to pediatric anatomy and physiology.
5. Preserve the child's body heat. Expose body parts only when ready to examine them, and cover when assessment is completed.

Management

1. Use equipment appropriate to the patient's size (where applicable, available).
2. Manage primary survey critical findings. Follow procedures as outlined in the *Cardiac Arrest Standards* for adults and children and in the *General Standard of Care.*

   Be aware that respiratory arrest is the primary cause of pediatric cardiac arrest; establish/improve and maintain an adequate airway as quickly as possible. (Also see *Respiratory Arrest - Children Standard*).
3. With respect to **oxygenation:**

   If attempting to administer oxygen to the young child, use methods which will help reduce anxiety and improve cooperation.

Guidelines

- have the parent/escort hold the oxygen mask close to the child's face;
- demonstrate oxygen use by placing the mask on the face of a doll or stuffed animal;
- poke a hole in the bottom of a paper or foam cup and push the oxygen tubing through the hole; draw a funny face on the bottom or sides of the cup;
- provide blow-by oxygen by holding oxygen tubing in cupped hand near child's face;
- discontinue oxygen administration if the administration device appears to be increasing agitation and subsequent risk of airway obstruction or respiratory arrest; use judgement.

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4. With respect to **lowering body temperature** in a febrile child:
   - Remove layers of clothing but do not actively cool the child.

   Guidelines

   - have the parent remove layers of clothing down to the underclothes or diaper;
   - keep blanketing to a minimum or dispense with it completely.

   - Maintain a comfortable temperature for the child inside the patient compartment of the ambulance.
5. With respect to **transport** of the child:
   - Transport all pediatric patients assessed at scene.
   - Transport parent(s) and child together whenever possible, e.g. unless the parents are interfering with resuscitation, the child is in cardiac arrest, or the parents are too distraught to accompany the child.
   - Position the child sitting/semi-sitting or in the child's preferred position unless contraindicated by injury, other conditions.
6. Enroute: prepare for vomiting in all cases - always keep suction available.

Pediatric General Assessment and Management – Additional Guidelines

A. Patient Communication

1. Whenever possible, have the parents present during assessment.
2. Introduce yourself to both parents and child; attempt to establish a rapport with both. If the child is fearful or anxious, talk to the parents first to allow the child time to become comfortable in your presence.
3. Sit close to the child, preferably at eye level, but avoid overcrowding. Sit on the floor if necessary.
4. Maintain eye contact, speak softly.
5. Use play techniques with toddlers and small children:
   - use a doll or stuffed toy to demonstrate exam procedures or to have the child explain "where it hurts";
   - demonstrate exam procedures on the parent first;
   - let the child and parents touch and handle equipment before examination.
6. Be direct in dealing with physical fears. Reassure the child; explain how you will make it better, but don't lie about painful procedures.
7. Be aware that both parents and child may be frightened, anxious and may lack understanding of the problem. Parents may also be suffering from guilt and self-blame resulting in lack of cooperation and/or anger, hostility and impatience. Attempt to calm and reassure them.

B. History-Taking

1. Question the child directly if the child is deemed stable, cooperative and old enough to understand questions.
2. Perform a pediatric systems review in small children with fever, or other non-specific complaints such as vomiting or diarrhea. Question the parent regarding:
   - rapid or laboured breathing, excessive drooling;
   - change in behaviour, personality;
   - lethargy, fretfulness;
   - loss of interest in usual toys and friendly faces;
   - blank staring, twitching, other bizarre behaviour;
   - poor appetite or refusal to feed/eat; vomiting; diarrhea;
   - in infants and toddlers, decrease in wet diapers (number, degree of wetness);
   - inconsolable crying or screaming, i.e. does not comfort as per usual, or becomes more irritable when picked up or held.

3. If suspect on the basis of presenting complaint and/or scene observations, keep child abuse in mind during history taking and during physical examination. (see *Child Abuse Standard.*)

C. Physical Examination - General Principles

1. Allow the small child to sit on the parent's lap. Have parent undress the child, or allow the older child to remove their own clothing for examination. Provide a blanket or other cover to preserve heat and privacy.
2. If the child is stable and cooperative, attempt to have only one paramedic perform the entire examination in order to minimize the child's fear and agitation. If the child is or becomes uncooperative, switch with or work with partner.
3. Chat with the child during the examination; speak softly. Explain procedures to the parents and to the child deemed old enough to understand. Enlist the aid of parents in providing explanations to the child if the child does not seem to understand your words or approach.

   Use play techniques as outlined under *Patient Communication.*
4. Keep examination equipment out of sight until ready to use.
5. Be gentle. Use restraint only if needed, and only the minimum required to perform necessary assessments. Enlist parental assistance. Explain reasons for restraint.
6. Avoid starting with the head and face in toddlers as this age group does not like to be touched in these areas, especially by strangers, and the child may become immediately agitated and uncooperative. Support the head when picking up infants.
7. Examine obviously painful areas last.
8. Ask parents if they think findings/responses are normal or abnormal for their child.

D. Primary Survey - What to Look For

Use the following guidelines when performing the primary survey in medical and/or trauma patients, as applicable.

- Does the child appear:
  - sick, lethargic, irritable?
  - in pain - screaming or crying inconsolably?
  - to be moving normally - body/limb movements normal, abnormal, reduced or absent?
  - hypoxic - restless or lethargic + pale or cyanosed?
  - in shock - pale, listless, cyanosed with altered sensorium or decreased level of consciousness?
- Normal breathing should be inaudible in the infant and child. Are there signs of:
  - tachypnea, i.e. respiratory rate above normal for age group?
  - upper respiratory distress: grunting, snoring, stridor, cough which sounds like a "seal bark", excessive drooling?
  - lower and/or upper respiratory distress - indrawing, nasal flaring in the toddler and infant; wheezing?
- Is the pulse rate above normal for the child's age group?
- Are there signs of dehydration, e.g. skin hot and dry, eyes sunken/dark circled, lips/mouth/tongue dry, cracked or fissured, no tears with crying?
- What is the child's posture? Does the preferred posture look unusual or abnormal (e.g. tripod posture indicating respiratory distress)?

E. Secondary Survey Assessments

Be able to recognize normal vs. abnormal pediatric vital signs or have access to a ready guideline for same. Consider the following assessments in the infant and toddler for medical or trauma disorders (as applicable).

- **Head and Neck**
  In the infant, the neck is short and "baby fat" may be excessive.
- **Anterior Fontanelle** (usually remains open up until 9-18 months of age)
  - depressed = shock, dehydration;
  - bulging = normal if the child is crying vigorously, raised intracranial pressure if the child is quiet.
- **Meningismus**
  Lift up the infant or toddler from the supine position by placing your hand on the back of the neck and raising the neck and upper body. Note whether the neck is supple or stiff; observe for pain response - verbal or facial grimace or crying/screaming. Alternatively, attempt to elicit active flexion, e.g. place a toy on the child's chest or abdomen to try to get the child to raise their head. Be aware that Kernig's and Brudzinski's Signs are not reliably seen in infants.
- **Chest**

  Note: if a loud blowing sound is heard between, before or after normal heart beats when auscultating the chest/heart = probable heart murmur.
- **Abdomen**
  - The liver edge is often palpable below the right costal margin.
  - Groin/scrotum - check for masses and swelling in children with unexplained persistent screaming and irritability; hernias are common in infant boys and herniated tissue (usually bowel) may become entrapped and/or strangulated.
- **Neurologic Assessment**
  - Document specific observations of the child's activity, body movements, eye movements, verbal/motor responses when the child is stimulated or interacting with parents.
  - Assess pupillary responses if possible; do not force the eyes open.
  - Glasgow Coma Score may be impossible to complete; use the Pediatric Glasgow Coma Scale for scoring.

Child Abuse (Suspect)

1. In cases where the paramedic suspects child abuse, use the guidelines outlined below to assist with history and physical assessments. Initiate appropriate management of injuries.
2. Make no accusations; make no comments about your suspicions in front of the parents or bystanders.
3. Transport the child in all cases where abuse is strongly suspect; if the child's parent/guardian refuses transport, report suspicions to the local Children's Aid Society. (Also follow procedures as outlined in the *General Standard of Care, Section I*, as required.)
4. Report suspicions of child abuse to receiving hospital staff and directly to the Children's Aid Society.

Guidelines

If you feel that child abuse has occurred it is not sufficent to report your suspicions to the receiving hospital staff. It is your legal obligation to report your suspicions directly to the Children's Aid Society.

Types of Injuries

Consider child abuse when attending calls for the following types of pediatric problems:

- bathtub near-drowning;
- bathtub immersion burns, i.e. soles of both feet; both buttocks;
- accidental ingestions/poisoning;
- other types of in-home injuries e.g. falls.

History

Use observation, judgement and clinical experience to assess the:

i) validity of the history provided. Suspect abuse if:
  - the story changes frequently or parents' stories differ;
  - the parents are vague about what happened;
  - one parent blames the other;
  - the mechanism of injury is obviously beyond the developmental capabilities of the child;
  - there has been prolonged, unexplained delay in seeking treatment;
  - there is a history of recurrent injuries.

ii) interaction (or lack thereof) between parents/caretakers and between parents and child, e.g. the parents are openly hostile, the child is inappropriately fearful or the child is avoiding the parents or clinging to one parent and avoiding the other (the child may also paradoxically protect the abusive party, either out of fear of losing a parent or because of verbal threats to keep quiet);

iii) appropriateness of parental/caretakers response to the child's injury and/or emotional distress, e.g. lack of concern, lack of physical comforting, anger inappropriately directed towards the child;

iv) appropriateness of child's behaviour relevant to the situation/injury, e.g. inappropriate fear, indifference, lack of emotion.

Scene Observations

- household/siblings dirty, unkempt, and/or in disarray;
- evidence of violence, e.g. overturned or broken furniture;
- evidence of substance abuse, e.g. empty liquor bottles, drug paraphernalia.

Physical Signs

- gross or multiple deformities which are incompatible with the incident history, especially in a child of under 2 years of age who is developmentally incapable of sustaining this type of injury;
- multiple new and/or old bruises which have not been reported or which have been reported as all being new. The age of bruises can be determined by their colour:
    - **less than 24 hours old:** reddish, with blue or purple shading;
    - **1-3 days:** blue to blue/brown;
    - **5-7 days:** greenish;
    - **10-14 days:** yellowish;
- distinctive marks or burns, e.g. belt, hand imprint, cigarette burns;
- bruises in unusual areas: chest, abdomen, genitals, buttocks;
- burns in unusual areas: buttocks, genitals, soles of feet;
- signs of long-standing physical neglect, e.g. dirty, malodorous skin, hair and clothing, severe diaper rash, uncut/dirty fingernails;
- signs of malnutrition - slack skin folds, extreme pallor, dull/thin hair, dehydration;
- signs of "shaking" syndrome - hemorrhages over the whites of the eyes; hand or fingerprints on the neck, upper arms or shoulders; signs of head injury unrelated to the incident history.

Sudden Infant Death Syndrome

Consider this syndrome in all cases involving apparently healthy infants presenting with sudden and unexplained respiratory or cardiac arrest.

Assessments, Management; Communication with Parents

1. Work with your partner; prioritize care at the scene:
    - Immediately assess and manage the child.
    - Support the family.
    - Make observations of the death scene, e.g. infant's position, appearance and posture; objects in the crib or in proximity to the crib; infant's medications, etc.
2. If the child is not "obviously dead", immediately initiate CPR and transport. Notify the receiving facility enroute. If parents are interfering with the child's assessment and care, remove or have them removed from the scene. Have another responsible adult stay with the parents. If possible, have someone drive the parents to the hospital and arrange to look after other siblings, secure the house, etc.
3. Treat the parent(s) with the utmost concern and consideration. Be kind, gentle and nonjudgemental. Make no accusations. Ask for and use the child's name. Ask open-ended questions e.g. "What happened?", "How was the baby when you put him to bed?" Answer parent's questions as clearly and accurately as possible.
4. If the child meets "obvious death" criteria, use judgement to balance the parents' need for action with the requirements of the *Patients with Vital Signs Absent (Transportation) Standard.*
5. Make scene observations as circumstances permit.
6. Clearly document all details of assessment and management, including pertinent scene observations.
7. If child abuse is suspected, follow *Child Abuse (Suspect) Standard.*

Guidelines

To assist paramedics in cases where death is "obvious"

- If the parents are emotionally distraught and do not believe the child is dead, it is best to initiate CPR and transport, even though the child is obviously dead. Attempt to take control of the situation; be firm, calm, professional and supportive. Explain that everything possible is being done for the child.
- If the parents are calm and have already accepted the child's death, do not start CPR. Handle the child's body gently. Provide verbal and tactile comfort to the parents. Reassure them and empathize with their feelings. Ask them if there is someone they would like called to help, e.g. clergy. Follow other procedures as outlined in the *Patients with Vital Signs Absent (Transportation) Standard.*
- The appearance of the infant may be disturbing - rigor mortis, blood-tinged mucous around the mouth, pronounced lividity in dependent areas (since the child has usually been dead for some time), marked pallor in non-dependent areas, marks or lines across the face or body if the child was lying against the crib rails. Temper your observations. In SIDS cases vs. child abuse cases, the parents' story usually coincides with what you see.
- Consider requesting/holding a debriefing session within 48 hours of call completion, to involve other first responders if possible.

Section 7

Geriatrics

Geriatric Assessment and Management Standard

These guidelines should generally be used when dealing with patients age 75 and over. Between ages 65-74, most elderly patients are "well" elderly with medical problems similar to those of middle aged adults, but the prevalence of certain disorders e.g. cardiovascular disease, is higher.

Recognize that the physiology of aging changes symptoms and signs; see the *Physiological Changes of Aging* section at the end of this standard.

Patient Communication

1. Assume that all elderly patients are capable of normal hearing, sight, speech, mobility and mental function, **unless** information is provided to the contrary e.g. medical information jewelery or tag, written medical information, history from family members or friends.
2. Always be respectful. Address the patient by their last name unless they indicate you may do otherwise. Be calm, courteous and as reassuring as possible.
3. When speaking to the patient, face them when possible, and make eye contact. If the patient appears to have trouble seeing, find out if they wear glasses; attempt to locate (or have someone locate) them and provide them to the patient or put them on the patient if they are not wearing same.
4. Attempt to assess the patient in a quiet environment, free of noise and other distractions.
5. Speak slowly; if the patient seems to be hearing impaired:
   - Check hearing status with family/bystanders; if there is a hearing device, ask whether it can be adjusted:
   - If there is no hearing device:
     - Don't shout - it distorts sounds in patients with residual hearing and doesn't help those who are totally deaf; simply raising your voice slightly above normal speaking level may help.
6. Allow the patient to write down information if the patient or family indicates it is their preferred method of communication.
7. Friends/relatives may be familiar with the "how to" of communicating with the patient; ask them to put your questions to the patient if you are not successful.

Assessments

A. General Considerations

1. Elderly patients may have one or more of the **4M's:**
   - **Multiple disease processes** in varying stages of development;
   - **Multiple prescription drugs;**
   - **Multiple complications/adverse effects;**
   - **Multiple problems** (social, economic, mental health, functional, environmental, psychological, nutritional) which may affect/contribute to the patient's medical problems.
2. Be aware of the **leading causes of death in the elderly:**
   - cardio/cerebrovascular disease;
   - cancer;
   - falls/fractures/accidents (which lead to immobility and secondary disability and disease which results in increased mortality);
   - pneumonia;
   - misuse of drugs.
3. Be aware of the **leading causes of confusion in the elderly:**
   - cardio/cerebrovascular disease;
   - infections;
   - malnutrition; dehydration;
   - drugs (including alcohol abuse - often occult);
   - senile dementia;
   - sudden change of environment e.g. hospitalization, institutionalization;
   - depression.
4. **Susceptibility to heat stroke** is increased due to altered thermoregulatory mechanisms, altered cardiovascular, respiratory and CNS functions, dehydration, electrolyte imbalance, infection, and drugs (e.g. antihistamines, anticholinergics, tricyclics, diuretics).

   Susceptibility to hypothermia is increased due to cold living quarters, decreased ability to cope with the effects of changes in ambient temperature, decreased metabolism and body fat, less efficient peripheral vasoconstriction, poor nutrition, low income, and, where applicable, alcohol ingestion (causes increased vasodilatation, hypoglycemia).

5. In the elderly, confusion is one of the most common manifestations of injury or organic illness. **Never assume the patient is "just senile".** Always seek other causes of confusion. Ask a reliable family member or friend to comment on the patient's present vs. usual mental status.

6. **Assume that sudden weakness, dyspnea or confusion in an elderly patient is indicative of an AMI until proven otherwise.** Pain may be atypical in nature, location or referral, or may be absent entirely.

7. **In elderly patients presenting with syncope, always assume there is a serious underlying disorder** - hypovolemia, cardiac dysrhythmias, cerebro/cardiovascular disease, renal failure, diabetes, drugs (e.g. diuretics, anti-arrhythmics, anti-hypertensives, nitrates, calcium channel blockers, beta blockers, digoxin).

B. Environmental Assessments

1 Assess living accommodations and living situation.

2. Note any evidence of apparent abuse - physical, neglect, deprivation.

3. Look for medications and evidence of alcohol abuse; transport medications/containers with the patient.

C. History

1. The paramedic may be the only source of information for receiving hospital personnel, since the patient is often sent to hospital unaccompanied (many elderly live alone due to death of their spouse). Obtaining a good history at scene is very important.

2. The chief complaint may seem trivial, vague or nonspecific, obscuring the true nature of a specific illness. **Always assume the illness is serious until assessment indicates otherwise.** Be aware that:
    - the patient may minimize or deny symptoms due to fear of being hospitalized or institutionalized, thereby losing their sense of self-sufficiency;
    - important symptoms may not be reported if the patient's memory is poor or they are mentally confused;
    - diminished responses to pain, infection, heat/cold may lead the patient and the paramedic to underestimate the severity of the illness/injury.

3. If a relative, friend or neighbour is available, obtain as much collateral history as possible, with focus on the:
    - presenting complaint;
    - patient's usual level of function (daily activities, mental state) and perceived deterioration in same;
    - type of support network available to the patient.

4. Refer questions to specific organs or systems; avoid medical jargon.

D. Physical Assessments

1. General - observe the patient's behaviour, dress/grooming, activity (e.g. ease of rising, sitting, other spontaneous movement, involuntary movement), nutritional status, mental status, general attention to and comprehension of questions and surroundings.

2. Ensure as much privacy as possible - many elderly do not undress in front of others, not even other family members.

3. Explain every step as you proceed.
4. Several layers of clothing may be worn - remove all layers if assessment is required.
5. Don't examine unnecessarily or spend an excessive amount of time on examination - many elderly patients fatigue easily and lose body heat quickly.
6. Roll the patient over if it can be done without compromising the patient's condition or causing severe pain - check lower back and buttocks. These areas may harbour bed sores; check heels for same. Note incontinence of urine/stool, bleeding, skin lesions, ulcerated areas.
7. Maintain a high level of suspicion for shock; the elderly may not react to shock due to the presence of underlying hypertension, cardiovascular or renal disease in addition to the concurrent use of cardioactive medications. For example, systolic BP of 110 in a patient with a history of hypertension, or a heart rate of 70 BPM in an individual taking beta blockers should not be interpreted as normal.
8. **Remember - interpret all findings in light of the clinical situation. "Normal" findings may include:**
   - Deafness (without hearing aid);
   - Reduced vision (without glasses);
   - Slurred speech (without dentures);
   - Dry, coated tongue (mouth breathing);
   - Dry skin (inadequate fluid intake, insensitivity to environmental temperature changes, medication effects);
   - Bruises from minor injuries (thin skin);
   - Crackles at the bases of both lungs (reduced air flow/volume, reduced clearing of secretions);
   - Higher than "normal" blood pressure (narrowed, thickened arteries);
   - Irregular heart rate (diseased cardiac conduction system);
   - Cataracts;
   - Blind eye (old trauma, usually from childhood);
   - Edema (varicose veins, inactivity, dependent positioning);
   - Shuffling gait, stooped posture (reduced muscle mass and strength, cerebrovascular disease, osteoporosis, osteoarthritis);
   - Missing digits (fingers/toes) (old trauma, usually from many years previous).

Management

1. Assume that patients with chronic illnesses are more likely to deteriorate rapidly in an emergency situation.
2. Handle and transport the patient as gently and carefully as possible, keeping in mind the impact of relevant physiologic changes of aging (discussed at the end of these guidelines), and adjusting management approaches accordingly.

Elder Abuse (Suspect)

The paramedic should consider the possiblity of elder abuse given the following:

1. Physical Signs:
    - Bilateral injuries indicating possible grabbing or restraint;
    - Injuries in unusual locations, i.e. chest, abdomen, buttocks, thighs;
    - Explanation of how injury occcured does not fit injury;
    - Circumferential injuries of the neck or wrists;
    - Over or under medicated;
    - Missing or broken eyeglasses, hearing aids, dentures, walkers.
2. Behavioural Signs:
    - Depression, fear, withdrawal, anxiety;
    - Fear of caregiver;
    - Caregiver refusal to allow patient and paramedic to be alone;
    - Observation of patient and caregiver interactions.
3. Signs of Neglect:
    - Dehydration - sunken eyes, poor skin turgor;
    - Poor hygiene;
    - Unsanitary living conditions;
    - Improper heating or air conditioning;
    - Inappropriate clothing for weather;
    - Unattended medical conditions.
4. Signs of Sexual Abuse:
    - Bruising of breasts or genitalia;
    - Unexplained venereal disease or genital infections;
    - Vaginal or anal bleeding;
    - Torn or stained underwear.

Assessment and Management

1. Treat the presenting medical problem.
2. Attempt to build rapport with the patient before questioning them about abuse or neglect.
   - If the paramedic suspects abuse, question the patient using plain language and in a non-judgemental fashion.
3. Attempt to identify the patient's level of isolation by asking about what activities they participate in.
4. Alert hospital staff of any suspicions of elder abuse.
   - If the patient requests the paramedic report the abuse, contact the police.
5. If the patient refuses any formal help, attempt to provide the patient with community resource contacts e.g. victim services, Community Care Access Centre.
6. Document suspicions on the ACR and consider completing an incident report.

Physiological Changes of Aging

a. Respirations may be less frequent, shallower, or irregular due to loss of lung elasticity, weaker muscles, and poorer coordination of respirations due to cerebrovascular disease affecting the respiratory centre in the brain.

b. Higher blood pressures are not uncommon, secondary to narrowing and thickening of the arteries, and irregular heart rates secondary to deterioration or disease of the electrical conducting system of the heart.

c. Temperature regulation is impaired and heat loss/heat maintenance is more difficult; sweating is reduced.

d. 20% of people >65 years of age suffer from some degree/form of dementia due to normal aging (hardening/occlusion of cerebral blood vessels and atrophy (shrinkage) of brain tissue), inherited disorders (Alzheimer's) or drug-induced dementia.

e. Vision and hearing may deteriorate to varying degrees.

f. Pain sensation may be diminished.

g. Gait and balance may be abnormal due to vascular deterioration in the brain and inner ear balance centres. Episodes of dizziness and syncope may be regular occurrences for such patients.

h. Dry mouth due to reduced amounts of saliva, tooth loss and impaired swallowing may increase susceptibility to choking or foreign body aspiration.

i. Reduced muscle contractions in the esophagus and decreased sphincter tone between the esophagus and stomach leads to greater acid reflux, heartburn and risk of aspiration pneumonia.

j. Fecal impaction/constipation is more frequent due to poor diet and fluid intake, inactivity, inattention by caretakers, dementia, effects of medications, and reduced contractions in the bowel.

k. Renal function may slowly deteriorate, making drug toxicity more likely if the patient is taking drugs which are normally excreted/metabolized by the kidney.

l. Bones may be weakened and more susceptible to fractures secondary to osteoporosis/ osteroarthritis/malignant infiltrates.

m. Skin becomes thinner and more susceptible to tearing, abrasions, and severe bruising; healing is prolonged and skin ulcers may occur.

n. The immune response may be stunted and fever response may be absent with infection.

Section 8

Psychiatric Disorders

The Psychiatric Patient
General Assessment and Management Standard

This standard applies to all scene calls for emotionally disturbed individuals where dispatch and/or bystander information indicates a psychiatric disorder is a known or likely cause of the patient's behaviour.

Personal Safety and Protection

See the *Violent, Aggressive or Agitated Patient Standard.*

Assessments

1. Unless dispatch and/or scene information indicates otherwise, assume an underlying organic disorder in all patients who present with disturbed behaviour or altered mental status, particularly in patients with one or more of the following presenting problems:
    - acute onset of change in behaviour or functioning;
    - behaviour alternates rapidly or changes abruptly, e.g. shouting and uncooperative behaviour, alternating with dozing off;
    - disorientation to person, place or time;
    - decreased level of consciousness;
    - impaired memory;
    - impaired cognitive function, e.g. confusion, forgetfulness, inability to understand simple instructions or cooperate for examination;
    - one or more of the above in a patient:
        - over the age of 40 years without a previous psychiatric history; and/or with
        - abnormal vital signs, incontinence of bowel/bladder and/or obvious signs of injury.
2. Assume that all suicide attempts are of serious intent.

Guidelines

Suspect attempted suicide in **single vehicle, single driver accidents** especially if circumstances and/or environmental conditions make an accident unlikely. Head-on crashes involving a stationary object, e.g. telephone pole, concrete buttress under a highway overpass, and a lone driver are most common. Driving over a cliff into water or hitting a train are also common.

3. If the patient is hostile, aggressive or actively attempting to cause harm to themself and/or others, follow the *Violent, Aggressive or Agitated Patient Standard.*
4. If the patient is cooperative, perform the primary survey and elicit history. If the patient is confused, vague or the information provided is incomprehensible, solicit information from bystanders. Attempt to ascertain whether an illness, injury, and/or drug or alcohol ingestion has precipitated the patient's behaviour. Ask about previous psychiatric history, including hospitalizations and diagnoses (if known).

Management

1. Manage identified primary survey critical findings, injuries, other conditions on a priority basis, prior to psychiatric assessment. Initiate rapid transport if indicated.
2. If working assessment is a psychiatric disorder and transportation other than an ambulance is available and deemed appropriate, notify dispatch and request permission to have the patient transported via the alternate mode of transportation.
3. Follow the *Emotionally Disturbed Patient - Care and Transportation Standard.*
4. If the patient refuses treatment and/or transport, follow the protocol outlined in *Section 1 - General Standard of Care.*

   For patients requiring **inter-facility** transfer, follow procedures outlined in the *Emotionally Disturbed Patient - Care and Transportation Standard.*
5. Enroute: monitor, re-evaluate and manage as required. Prepare for problems expected on the basis of working assessment.

Emotionally Disturbed Patients – Care and Transportation Standard

Purpose

This standard is intended to provide paramedics with direction on care and transportation of emotionally disturbed patients.

Paramedics must:

1. Have a sound working knowledge of the procedures to follow in the transportation of the emotionally disturbed patient.
2. Practice all procedures surrounding the transportation of the emotionally disturbed patient as the need arises.

Use of Escorts

- ***Violent or Potentially Violent Patient***
  Police assistance will be requested prior to the ambulance transport of violent/potentially violent patients.
- ***Patient in Custody/Court or Ontario Review Board Disposition***
  An escort (in addition to the paramedic) designated by the Justice of the Peace (JP) or hospital's officer in charge/delegate is required to maintain the custody of patients in custody or under Court or Ontario Review Board Disposition during transport.
- ***Other Emotionally Disturbed Patients***
  In the transfer of all emotionally disturbed patients other than a potentially violent patient or a patient who is in custody/or under Court or Ontario Review Board Disposition, the physician will determine the need for and appropriate type of escort.

Use of Restraints

Paramedics will not restrain patients unless they are assisting at the direct request of a physician, police officer or in the event that an unescorted patient becomes violent enroute.

Definitions

1. **Persons who cannot be transported against their will:**
   Means a person who is voluntarily seeking admission to a psychiatric facility.
2. **Persons who can be transported against their will:**
   The following persons can be transported against their will, subject to the provisions of the Mental Health Act:
   - the subject of an application for assessment signed by a physician under *subsection 15(1) of the Mental Health Act* (Form 1), or;
   - the subject of an order for examination signed by a Justice of the Peace under *subsection 16(1) of the Mental Health Act* (Form 2), or;
   - detained in a psychiatric facility under a certificate of involuntary admission (Form 3) or a certificate of renewal (Form 4), or;
   - remanded by a judge for admission to a psychiatric facility under *subsection 22(1) of the Mental Health Act* (Form 8), or;
   - absent without leave and is the subject of an order for return to a psychiatric facility under subsection *28(1)(b) of the Mental Health Act* (Form 9).
3. **Violent or potentially violent patient:**
   Means patients whose behaviour/past history indicates the potential to harm themselves or others.

Procedures

1. On arrival at the scene, assess the condition and behaviour of the patient:
   a) **Persons who cannot be transported against their will:**
      - Generally special arrangements are not required for such unless the patient is violent and/or dangerous.

   b) **Violent or potentially violent patient (regardless of legal status under the *Mental Health Act*):**
      - Ask dispatch to request police assistance at the scene if this has not been done already.
      - Delay transfer of a patient who appears to be a safety risk or who has the potential to become violent enroute until the police or the physician sufficiently restrain the patient.
      - Do not attempt to restrain a patient unless assisting at the direct request of a physician, police officer or transporting an unescorted patient who becomes violent enroute (see *section (e), Restraints*).

c) **Patients who can be transported against their will:**

- Do not depart the scene with a patient who can be transported against their will until such time as:
  - the appropriate documentation (refer to definitions under the *Mental Health Act*) has been signed by the physician and is in the possession of the paramedic, or
  - a police officer assumes custody of the patient and accompanies the patient enroute.

d) **Patients in custody/under Court or Ontario Review Board Disposition:**

- Do not depart the scene until an escort designated by the hospital's officer in charge/ delegate is available to accompany the patient in the ambulance.
- Although it is the responsibility of the escort to maintain custody of the patient, a paramedic may assist in restraining/detaining the patient subject to the conditions of *section (e), Restraints,* below.

e) **Restraints**

- Do not attempt to restrain a patient except:
  - at the direct request of a physician or police officer; or
  - when an unescorted patient becomes violent enroute and poses a threat to the patient's own and/or the crew's safety.
- Should the paramedic be requested to assist in restraining a patient or restrain an unescorted patient who becomes violent enroute, the extent of the restraint will be determined by the reasonable and minimal use of force required to keep the patient under control, having regard to the physical and mental condition of the patient and the safety of others.
- Where restraints are applied prior to departing the scene, a hospital escort or police officer is required to accompany the patient in the ambulance.
- In all cases where the paramedic crew are involved in the restraint of a patient (escorted or an unescorted patient who becomes violent enroute), the paramedic crew will advise dispatch and document on the ACR:
  - reason for restraint;
  - person (physician/police officer or paramedic) ordering restraint;
  - method of restraint;
  - position of the patient during restraint;
  - consequence of restraint.

Restraint of Patients Standard

To be used only if a paramedic is authorized by police or a physician to assist in restraining a violent, aggressive patient, or if emergency restraint is required in the back of a land or air ambulance during transport. In the latter situation, time and resources will* ***not* *be available to carry out the preparatory steps (A, B, & C).*

A. Organize the team **before** attempting restraint. An ineffective attempt may incite the patient to greater violence. Four to five (4-5) people will be required. Identify a clear team leader. Assign at least one person to each limb. A fifth person is ideal to control the head and/or be team leader. If six people are available, the fifth can control the head and the sixth can coordinate the procedure.

Four or more team members will also provide a show of force and may be face-saving for the patient.

B. Rehearse the response and the entire procedure in advance. If extra personnel arrive in the interim, brief them quickly on the problem and the planned intervention.

C. Prepare all equipment in advance.

Use restraints which are durable and in good condition to avoid tearing or breaking with resultant injury to rescuers or the patient. If available, soft padded leather or cloth restraints are recommended to avoid injury to the struggling patient. If police apply metal handcuffs, be aware that they can cause injury. Avoid body restraints as they may cause strangulation or impaired respiration if the patient is struggling.

D. Inform the patient of the need to restrain them and explain the procedure. Treat the patient with respect; avoid injury to yourself and to the patient if at all possible.

E. On command from the team leader, immobilize the patient's limbs and head in one coordinated effort. Grasp each limb at the main joint and between the main joint and the distal joint, e.g. one hand on the elbow, the other on the forearm.

F. Place the patient in a "spread eagle" position supine (arms and legs spread apart) or in the left lateral position (see *Note 3* at the end of this Standard).

G. Restrain each extremity as follows:

- secure one arm above the head and secure the other to the stretcher at waist level;. *alternately* secure both hands to one side of the stretcher;
- elevate the head of the stretcher to protect the airway and to allow the paramedic greater visibility;
- secure the feet, with legs still spread apart;
- assess distal pulses in the extremities after restraints have been applied.

Ensure that the limbs are secured to the main frame of the stretcher, not to the stretcher side rails. Attachment to the main frame will allow tightening of both restraints at once (should they become loose) simply by raising the patient's head and shoulders a notch or two by raising the head of the stretcher.

H. Ensure the stretcher is fixed inside the ambulance to prevent the patient from flipping it over.

I. Reassure the patient. Remind them that you are there to assist in their getting care, to protect them and to prevent them from causing injury to themselves or others.

J. If restraint has been authorized by police or a physician, do not remove the restraints enroute to hospital. Never bargain with the patient for removal.

If emergency restraint is applied during ambulance transport i.e. an unescorted patient becomes violent and all reasonable verbal efforts fail to calm the patient, use on-going assessment and judgement to determine the necessity for continued restraint throughout the transport. It is advisable to maintain restraint, especially if travelling by air, when dealing with drug-induced violence e.g. excited delirium, or florid psychotic behaviour.

K. Never leave the patient alone once restraints have been applied.

L. Once restrained:

- obtain set of vitals; reassess every 10 minutes;
- assess the patient within the limits possible imposed by the restraints;
- manage life-threats/serious conditions as permitted by the restraints and the patient's behaviour;
- if possible and prudent, carefully search the patient for hidden weapons such as knives or razors, and search for drugs.

Do not forget the common medical causes for combativeness:

- hypoglycemia;
- hypoxia;
- head injury;
- hypo/hyperthermia;
- drug/alcohol ingestion.

Deterioration secondary to any of these conditions may cause the patient to "calm down". Be alert and repeat the primary survey when violent behaviour abates.

M. Check neurovascular status in the limbs at 10 minute intervals. Perform other assessments as permitted by time, the patient's condition and the restraints.

N. Continually monitor the patient, even when in the placid state (may indicate a pre-arrest condition).

O. Notify the receiving facility of the patient's condition and the need for restraints.

Notes

1. Stockinette is tubular, stretchy material, that is applied to a patient's arm before applying a cast or is used as a type of sling apparatus. It is often used to restrain patients as well, especially elderly patients who have thin, fragile skin which bruises easily.

   For purposes of restraint, apply stockinette (if available), as follows:

   - take a piece of stockinette approximately 7-10 cm wide and approximately 1 metre long;
   - slip it onto the patient's forearm;
   - wrap about five turns of 5 cm (approximately) cloth adhesive tape snugly around the narrowest part of the patient's wrists, on top of the stockinette's distal end;
   - turn the stockinette inside out, thus covering the fingers, and tie it to the frame of the stretcher.

   This technique works well for all patients, even stronger ones. If stockinette is not available, towels can be applied as restraints, using a similar technique.

2. Patients suffering from excited delirium or others who are struggling violently should be restrained and transported either on their side, on their back, or upright, with careful attention to airway patency and adequacy of respirations. Whenever possible, two paramedics should be with the patient at all times during ambulance transport. Paramedics may need to request assistance of police, allied agency personnel or another paramedic crew to facilitate this.

3. **Prone positioning is not to be utilized for several reasons:**

   - impairs patient assessment, management and monitoring;
   - increases risk of death in patients suffering from excited delirium especially if police have tied the patient's hands behind their back (see the *Violent, Aggressive or Agitated Patient Standard* re: excited delirium);
   - violent struggling combined with factors such as obesity, full stomach, drug and alcohol impairment and exhaustion can compromise diaphragm and lung functions and increase cardiac irritability, leading to **sudden death** from positional asphyxia or drug-related cardiopulmonary problems.

The Violent, Aggressive or Agitated Patient

This Standard should be followed in conjunction with the *Emotionally Disturbed Patients - Care and Transportation, Police Notification* and *Restraint of Patient Standards.*

Personal and Patient Safety and Protection

1. Assign first priority to personal safety. If in doubt regarding personal safety, request and await police assistance before approaching the patient.

Note: Police should already be at scene or enroute if dispatch information indicated a potentially dangerous situation.

2. Wait for police assistance if you see or hear active gunfire or evidence of other violence. If you decide to approach a scene where violence has been reported but none is obvious, follow these guidelines to reduce risk of harm:
    - Turn off lights and siren a few blocks from the scene.
    - Ensure a clear, vehicle exit route.
    - Carry your portable radio.
    - Park a safe distance from the scene.
    - Walk on soft ground or grass if possible - avoid making noise.
    - If using a flashlight, hold it by your side, not out in front of you.
    - If more than one paramedic approaches the scene, walk single file with the one in front holding a flashlight, and the one behind carrying the first response kit and other equipment as required.
    - Note areas of concealment which would offer protection if necessary.
    - Stand to the side of a door when knocking, never in front.
    - If no one answers, call dispatch for more information; check the back door.
    - Stay out of kitchens - they are full of weapons (knives, forks, scissors).
3. If providing care at a crime scene:
    - only touch or move items as needed to protect the patient and to provide proper care;
    - identify yourself to the patient; do not question them directly about the crime;
    - note the position and condition of the patient before removing the patient from the scene;
    - preserve the chain of evidence as much as possible; carefully bag and hold all linen for the investigating officer.

Assessments

1. Assume an underlying organic cause for the patient's behaviour until assessment indicates otherwise.
2. If the patient is uncooperative, elicit incident history from others at the scene. Attempt to ascertain whether illness, injury and/or alcohol/drug ingestion has triggered the present behaviour and whether there is a past history of violence.
3. In the event that a paramedic is forced to deal with a dangerous situation e.g. while awaiting police arrival, or the situation is unexpected, attempt to stabilize the situation:
   - **Observe for behavioural signs of impending violence** and be prepared to protect self and others if necessary. Behavioural signs include:
     - pacing, especially the approach/avoidance pattern i.e. the patient walks rapidly towards, then away from you;
     - tense posture;
     - loud, strident, accusatory or challenging speech;
     - reflex actions such as a startle response out of proportion to a minor stimulus;
     - open threats (verbal, physical and/or with weapons).
   - If confronted with an armed patient, seek a safe escape route and attempt to withdraw carefully.
   - If you cannot withdraw safely from an armed patient or if the patient is coherent and unarmed but agitated, aggressive and hostile, attempt to speak with and calm the patient.
4. Perform a **head-to-toe secondary survey** (including baseline Glasgow Coma Score) if the patient becomes cooperative or is restrained.

Guidelines

Approach to Interview

- Always face the patient. Keep the door to the room open. Ensure that both you and the patient have clear access to an escape route. Identify as many exits as possible, at least two.
- Negotiate from a safe distance (at least 2 metres) whenever possible. Avoid threatening speech or gestures. Speak slowly and clearly; address the patient by name. Advise the patient that you are there to help them. Keep your body stance as relaxed and neutral as possible. Keep your hands in front of you at all times.
- Encourage the patient to talk. Listen carefully to everything the patient has to say. Remain non-judgemental. Sit if they are sitting, stand if they are standing. Attempt to assess the patient's mental status during the interview.
- Maintain intermittent eye contact; constant direct eye contact may be perceived as threatening by a violent patient.
- If the patient makes repeated excessive demands, remind them that you are there to help them and that they are not allowing you to do so by their actions. If the patient remains hostile towards you, attempt to have someone else speak with them.
- Ask the patient who or what they are really angry with and why. Agree with the real aspects of their anger, empathize with them regarding their situation, ask them for suggestions as to how they could improve the situation, and offer your assistance in achieving a solution.

  Question the unreal aspects of the patient's anger, e.g. delusions, hallucinations. Indicate that you would feel upset if you felt the same way and ask how these thoughts make them feel. If the patient becomes lost in psychotic wanderings, attempt to bring them back to reality by reminding them who they are, where they are, who you are, etc.
- When the patient has finished their story, review and restate their complaints to try and identify their real concerns. If they are using their behaviour as a means of obtaining something they want, point out that anger is only making it harder for them and others to help them.

  Clearly state the consequences of an aggressive act before it happens. Remind the patient that your job is simply to help them.
- Closely observe the patient's body language, and monitor your own for signs of hostility.

Management

1. Manage primary survey critical findings and other life-threatening conditions on a priority basis.
2. With respect to **restraint** -
   - Restrain a patient only if:
     - a physician or police officer makes a direct request of the paramedic, or
     - an unescorted patient becomes violent (at scene or enroute) and must be protected from inflicting serious bodily harm to themselves or others, and all reasonable verbal efforts have failed to calm the patient.
   - Use only the reasonable and minimum force deemed necessary to keep the patient under control, having regard to the physical and mental condition of the patient and the safety of others.
   - Use appropriate techniques to restrain the patient (see *Restraint of Patients Standard*).

Patient Transport

1. Delay transfer and request a police escort if violence is expected and additional assistance/ restraint is likely to be required.

   If upon ambulance arrival, police are restraining a patient, or have applied restraints, advise police that an officer must accompany the patient in the ambulance.

2. Use on-going assessment and judgement to determine the necessity for continued restraint throughout ambulance transfer.

Guidelines

If the patient has been restrained, it is best to keep them restrained, especially if travelling by air and especially when dealing with:

- drug-induced violent behaviour or excited delirium, e.g. cocaine abuse;
- florid psychosis, e.g. paranoid hallucinations, delusions;
- other conditions which predispose to sporadic outbursts of violence, e.g. tricyclic overdose.

Guidelines

Excited delirium is a state of impaired thinking and violent struggling induced by drug abuse (especially cocaine), severe alcohol intoxication, acute psychosis or a combination of all three. It is a medical emergency. These patients are at risk of sudden death. Features include:

- impaired thought processes e.g. disorientation, acute paranoia, panic, hallucinations;
- unexpected physical strength;
- apparent ineffectiveness of pepper spray;
- significantly decreased sensitivity to pain;
- sweating, fever, heat intolerance, or, dry/hot skin with no sweating despite extreme agitation;
- sudden tranquillity after frenzied activity (could be the pre-arrest state).

Death may occur secondary to hypoxia, asphyxia, drug-related cardiopulmonary problems or other life-threatening complications. Risk of sudden death is increased by restraining the patient in the prone position (see *Restraint of Patient Standard*).

Rapid transport for definitive treatment is recommended.

3. With respect to **inter-facility transfers:**
   - If upon arrival at the sending facility, facility staff or police are restraining a patient or have applied restraints, advise that a police officer or hospital escort must accompany the patient in the ambulance.
   - If sending staff indicate that a patient requires restraint during transfer:
     - Advise that restraints must be provided and applied by hospital staff or police prior to transport;
     - Advise that an appropriate facility escort must accompany the patient;
     - Determine the need for a police escort and request as required, prior to transport.
4. Enroute: monitor; re-evaluate and manage as required; prepare for problems expected on the basis of working assessment.

Reporting and Documentation

1. If the patient has threatened violence towards specific individuals, either by gesture or by name, document this information. Advise receiving staff and police officers assigned to the case.
2. If restraint was required, document the:
   - reason for restraint;
   - name and title of the person ordering restraint, e.g. physician, police officer, paramedic;
   - method of restraint;
   - position of the patient during restraint;
   - consequences and effects of restraint.